New Orleans Medical

and

Surgical Journal

Vol. 79 OCTOBER, 1926 No. 4

YATREN 105 IN THE TREATMENT OF AMEBIC DYSENTERY.

A PRELIMINARY NOTE.*

R. H. TURNER, M. D., AND P. H. JONES, M. D.,

From the Department of Medicine, Tulane University and Charity Hospital,

NEW ORLEANS.

At the suggestion of Dr. C. C. Bass we have undertaken to test the value of Yatren in the treatment of amebic dystentery. Although the cases treated have not, at this time, been observed for a sufficiently long period of time to enable us to arrive at final conclusions as to its value, the results thus far have been of such interest as to be worth reporting.

Yatren 105 is the trade name for the chemical compound said by Muhlens and Menk to be iodoxyquinolinsulphonic acid with an admixture of sodium carbonate to render it more soluble. It is, then, an organic compound of complicated structure containing 28% iodine. The same drug is said by Kop to exist under several other names. It is on the market in this country in two forms, wafers of 0.5 gram and pills of 0.25 grams each, both of which have salol coating.

This drug was first used in Germany in 1912 as a local antiseptic and as such applied with success to amebic ulcers by Muhlens and Menk and reported by them in 1921. Since then its local application has largely given place to oral administration. Favorable reports are in the literature of its use in Germany, England, Brazil, Japan, and China. We have not found reports of toxic symptoms.

The drug costs about $0.20 per gram and for our routine treatment the expense is about $8.50 per patient.

Following are brief case records of those treated:

Case No. 1. (This case was turned over to us, along with very complete records of his previous course by Dr. F. M. Johns.)

W. A. S., white, iceman, 29; married; resident of New Orleans.

The patient had had dysentery since 1919, for four years before coming under the observation of Dr. Johns, which was two years before he began his Yatren treatment. He had been treated three times with emetine, followed twice with ipecac. First: Five injections of emetine followed by 100 ipecac pills; free of symptoms for one year. Second: Six injections of emetine followed by 100 pills of ipecac; free of symptoms for 8 months. Third: Thirty-three injections of emetine without any relief. Dr. Johns treated him most thoroughly with stovarsol and stovarsol and emetine combined and he relapsed four times during the two years. The first relapse was a month after finishing two courses of stovarsol (three 0.25 gram tablets daily for one week as a course.) The second relapse was three months after stopping medication which had been: one week of stovarsol as above followed by six injections of emetine 1 grain each, then by two weeks of stovarsol, two tablets daily. The third relapse was four months after completing four courses of four tablets of stovarsol daily for six days each with one week intervals. The fourth relapse came 10 days after he had stopped 3½ months of continuous stovarsol therapy: one week he would take 4 tablets daily and the next two

*Read before the Orleans Parish Medical Society, June 28, 1926.

daily. He continued so long through misunderstanding instructions. He never had any symptoms of arsenic poisoning. All relapses were proven by Dr. Johns' finding typical motile red blood cells containing endomeba dysenteriae.

It was at this last relapse that the patient came under our care. He was having 10 to 15 movements daily with much blood and mucus; tenesmus was distressing.

General physical examination uninteresting; liver not enlarged to palpation or percussion. On December 16, 1925, patient was proctoscoped and treatment begun. Proctoscopic examination showed a moderately scarred and thickened rectal mucosa with several small bleeding points on posterior wall 5 cm. above the internal sphincter.

First course of yatren consisted in one gram by mouth three times a day for a week, together with daily enemas for the first three days which consisted of 100 cc. of 2% aqueous solution of yatren. Blood and mucus disappeared, diarrhoea and tenesemus were relieved after 48 hours of this treatment. After an interval of two weeks the treatment was repeated but this time without the enemas. Then after another interval of two weeks a third course of 0.5 gram three times a day was given. His third and last course was finished February 4th, 1926, nearly four months ago. At the end of each course and before beginning the next and at intervals of one month since completing last course the stools have been examined for cystic amebas with negative results. Since completing the first course of yatren he has had one formed movement daily, excepting when taking yatren when he had 2 to 3 soft movements daily without any discomfort. Also, early in May, 1926, he had a week of diarrhoea associated with very severe urticaria, both of which followed an injection of a prophylactic dose of tetanus anti-toxin. (He had run a nail into his foot.) Two stool examinations and a proctoscopic at this time revealed no evidence of amoebiasis. He considered himself a well man. His weight at the time of beginning treatment was 135 pounds; June 23, 1926, it was 157. He has now reached his normal weight for the first time since onset 6 years ago.

Case No. 2. M. R., white, male, ship engineer, Central America service; married; 35. Admitted March 3, 1926, Ward No. 20. Service of Dr. O. W. Bethea, Charity Hospital.

Onset in June, 1925, nine months before admission, and a short time after visiting a Mexican port where he ate various raw fruits and vegetables. Onset sudden with diarrhoea, tenesemus, abdominal pain, blood and mucus containing stools. He was treated by a physician who gave by mouth 27 small pills during 3 or 4 days with complete relief of symptoms. He continued very well until November, 1925, four months before admission, when aboard ship he had a sudden return of all ing severity, having from 5 to 15 movements daily, usually with blood and mucus. For two weeks he had had severe pain in the right lower abdominal quadrant. He was diagnosed in Dr. Musser's clinic, where typical amebas were found, and admitted to Dr. Bethea's service for treatment.

General physical examination negative; marked tenderness on deep pressure in both lower abdominal quadrants. On March 26th he was proctoscoped and large ragged ulcers found covering most of the lower rectum. From these, scrapings showed many typical motile amebas containing many red blood cells.

The treatment used in this case has been adopted as our routine for this study. It consisted of yatren 105 by mouth, one gram (four pills) three times a day for seven days, followed by an interval of one week without any medication, then by another week like the first, one gram three times a day. First course begun March 26th, 1926. The patient continued on regular ward diet and out of bed most of the time during the day. On the third day of treatment he had only one stool and that formed—as they continued to be throughout period observed. Abdominal pain and tenderness disappeared on the 6th day of therapy. Twelve days after beginning therepy he was proctoscoped. Where ulcers had been, only what appeared to be smooth granulation tissue was to be seen. This bled easily on scraping. No vegetative amebas were found and a formed stool at this time showed no cystic forms. At the end of the second course another formed stool was examined for cysts with negative results. During these three weeks under treatment he gained three pounds and his general health showed great improvement. After leaving the hospital he left for parts unknown and we have not been able, so far, to locate him for follow up.

Case No. 3. R. B., mulatto; male; 40; porter; New Orleans; Dr. J. C. Cole's Clinic patient.

In 1923 he was treated for syphilis with neosalvasan at Charity Hospital. Wassermann reaction now negative. He has lived for the past 20 years in Louisiana.

Duration of illness was 10 days. Onset gradual; diarrhoea, with tenesmus, increased during the first 3 days to 10 movements daily with the appearance of blood and mucus at the end of that period. From that time movements were mainly blood and mucus. Crampy pain and tenderness in

the mid-abdomen for the last three days. He was diagnosed by Dr. Cole in the Charity Clinic on April 5th, 1926, when he was given 15 grains of bismuth subnitrate by mouth three times a day for 3 days as a temporary measure. Dr. Cole turned him over to us at the end of this three days.

Patient was robust, well nourished mulatto; general examination negative. Marked tenderness over the region of the sigmoid; liver was not enlarged to palpation or percussion. Proctoscopic: Large ulcer on posterior wall of rectum 6 cm. from the external sphincter. Scrapings showed a moderate number of actively motile amebas containing many red blood cells.

Patient sent home to bed; put on a liquid diet. Began immediately a course of yatren—one gram three times a day by mouth for one week. (From April 8th to 16th, 1926.) He kept a daily record of movement which is as follows (number of stools in succeeding 24 hour periods): 14, 8, 3, 5, 4, 3, 2; no tenesemus after 48 hours; no blood after 72 hours. At the end of week of treatment proctoscopy showed ulcerated area covered level with granulation tissue; no amebas found in scrapings. He was allowed to go back to work with soft diet. An interval of 10 days without medication was allowed, during which he had one formed stool daily. At the end of this period a warm stool was examined. It was formed with a coating of dark mucus. Mucus showed red blood cells and pus cells but no vegetative amebas and the stool no cysts. He was proctoscoped. No ulcers were seen but patches of mucus were scattered over the mucosa. Several preparations showed no amebas. He was placed on yatren 0.5 gram three times day for a week but through misunderstanding he took it for two weeks. During this period he had one or two soft movements daily. For the past 6 weeks he has had no medication and has felt quite well; has one formed movement daily. Two examinations for cysts during this period have been negative.

Case No. 4. A. D., white, male, 44; farmer; married. Admitted to Ward 14, Charity Hospital, May 6, 1926, Dr. J. H. Musser's service.

Onset suddenly 12 years ago, in 1914, with diarrhoea and tenesmus, blood and mucus in the stools, of which he soon had 10 or 15 daily. He spent about two weeks in bed and at the end of that time he was having about 5 movements daily, still with blood and mucus. During the 12 years since that time he has not had less than five movements daily, usually with blood and mucus. He has apparently not had treatment with ipecac, emetine, or stovarsol. Weight 12 years ago was 165 to 170 which fell during the first two years of the illness to 140 from which it had not varied greatly. He has attempted to work since the first two weeks of illness but with poor success since severity of diarrhoea depended largely on amount of activity. For the two last months before treatment he had been having crampy pains in the abdomen, mainly in epigastric region; no pain in the liver region.

Examination showed a large framed man, moderately under weight. General examination was negative except for tenderness over the region of the sigmoid; liver not enlarged to palpation or percussion. Proctoscopic: Lower 8 to 10 cm. of rectal mucosa greatly scarred and puckered, covered with patches of bloody mucus. Only one definite, ragged, bleeding ulcer which was about 3 cm. in diameter on the anterior wall cm. from external sphincter. Scrapings showed many actively motile amebas containing many red blood cells.

Treatment according to our routine was begun the day of the proctoscopic (May 7, 1926). Patient on regular ward diet and out of bed most of the day time. Blood and mucus disappeared from the stool after the first 48 hours of treatment; no tenesmus after the same period. Proctoscopic at the end of the first week showed the ulcerated area covered with granulations. Mucus and feces obtained showed no vegetative amebas or cystic forms. Since the first week of treatment patient has had one formed stool daily; specimen at the end of the last course and one month later were examined for cysts with negative results. During the first month of treatment his weight rose from 147 to 165 which he has maintained since.

Case No. 5. E. B., white, male; farmer; age 36; widower, Houma, La. Admitted to Ward 19, May 17, 1926, Charity Hospital. Service of Dr. A. E. Fossier.

First trouble in 1911, fifteen years ago with a sudden onset of diarrhoea, with blood and mucus in the stool. He was in bed for the first month during which time his symptoms became much milder but blood and mucus and a certain amount of tenesmus persisted for two or three years, being relieved by taking a liquid medicine. He had no bowel trouble for the next six years. But during the past six years he had three more attacks of the same trouble, each lasted 5 to 6 months. One of these was relieved by seven daily injections in the arm. Present attack began in February, 1926, three months before admission. He had lost 10 or 15 pounds during this attack.

He was a poorly nourished, stupid individual; few teeth present, those carious. Heart and lungs normal. Liver not enlarged to palpation or per-

cussion. Marked tenderness over the region of the sigmoid. Proctoscopic: Rectum viewed for 12-15 cm. from the external sphincters; it was greatly scarred and showed 12 or 15 ulcers of varying size, mainly superficial; one deep ragged ulcer seen.

Treatment begun the day of proctoscopic examination (5/18/26) and was according to our routine. Patient on regular ward diet but in bed most of the time. The number of movements for each succeeding 24 hours after beginning treatment is as follows: 18, 4, 3, 3, 2, 1, 1. No tenesmus or blood after the first 24 hours; since first course he has had one formed movement daily. Proctoscopic at the end of the first course showed almost complete healing of the ulcers; some of the areas were still quite red and tags of mucus could be found which contained blood; no amebas were found. Proctoscoped a week later and further healing noted. A stool at the end of the second course was examined for cysts with negative results. During the three weeks in the hospital he gained six pounds; general health greatly improved.

Case No. 6. C. S., white, male, 30; farmer; single; Mandeville, La. Admitted to Ward 20, May 18, 1926, Charity Hospital. Dr. O. W. Bethea's service.

Diarrhoea began gradually in December, 1925, about five months before admission. Blood and mucus were not noticed in the stool until 3 or 4 weeks after onset; tenesmus severe from the beginning with four to ten movements daily. Weight dropped from 140 to 120.

He was markedly undernourished; moderate tenderness over the sigmoid; liver not enlarged to palpation or percussion. Proctoscopic examination on May 18th showed the lower 10 or 12 cm. of the rectum covered with small superficial linear ulcers 10 or 15 in number. Scrapings showed enormous numbers of actively motile amebas containing many red blood cells.

Treatment begun on May 18, 1926, and consisted in the two routine courses with a week's rest between. Regular ward diet given throughout; patient in bed little during the day. After the first 48 hours of treatment patient has had one formed movement daily; no tenesmus or blood after the first 24 hours. Proctoscoped at the end of the first course and a practically normal mucosa seen. Stool at that time showed no vegetative or cystic amebas. Stool examinations at the end of the second course and one month later were also negative. Weight in three weeks rose from 120 to 134 pounds.

Case No. 7. W. B., colored, male, 35; farmer, Thibodaux, La. Admitted to Ward 252, Charity Hospital, May 22, 1926. Service Dr. G. S. Bel.

Onset was in 1925, one year before admission. He had 4 or 5 movements daily with considerable tenesmus but only occasionally with blood. Diarrhoea was very distressing for one week but checked without treatment. During the year he had had mild exacerbations lasting from one to three days when he would have three or four movements daily, occasionally with blood; these would come one every two or three weeks. Before admission he had for one week been having four or five movements daily, usually with blood. He had apparently had no treatment by a physician. During the year his weight had fallen from 145 to 119.

General examination unessential; very poorly nourished negro man; liver not enlarged to palpation or percussion; moderate tenderness over the region of the sigmoid. Proctoscopic examinations on May 24th showed 8 or 10 small fairly deep bleeding ulcers in the lower rectum. Scrapings showed many actively motile amebas containing many red blood cells.

Treatment begun May 25, 1926, and was the same two courses with a week of rest between except that the patient ran away from the hospital on the fourth day of his second course. The patient ate the regular ward diet and was out of bed most of the daytime. After the first 48 hours of the first course all acute symptoms disappeared and during the remainder of his stay he had usually one formed movement daily; his general health improved markedly. Proctoscopic at the end of the first week of treatment: areas previously ulcerated showed up merely as reddened spots with a slightly roughened surface. Mucus present did not contain blood or amebas. Efforts are being made to follow patient further.

Case No. 8. V. G., white, male, 30; married; truck driver, Violet, La. Admitted to Ward 66, Charity Hospital, June 7, 1926. Dr. W. P. Bradburn's Surgical service.

Onset gradual, January, 1926, six months before admission; diarrhoea was distressing with severe tenesmus and with blood and mucus in the stools—three to ten movements daily. Weight fell from 165 to 144. There was great loss of strength. He felt sure he had piles and was admitted to the surgical service for operation; there Dr. M. W. Miller, the interne in charge, diagnosed amebic dysentery and Dr. Bradburn kindly allowed us to treat him.

He was a large framed, markedly undernourished man. General examination unessential. Liver

not enlarged to palpation or percussion. Marked tenderness over the region of the sigmoid and slight tenderness over the caecum. Proctoscopic examination on June 9, 1926, showed four rectal ulcers, moderately deep, 2 to 3 cm. in diameter, covered with bloody mucus. Scrapings showed a few actively motile amebas containing many red blood cells.

Patient continued on regular ward diet and was out of bed most of the time during the day. He received yatren according to our routine and is at present taking the second course. All acute symptoms disappeared after the first 24 hours of treatment; for the remainder of the week had two soft movements daily. At the end of the first week he was proctoscoped. Two of the ulcers were well covered with granulation tissue; one was only slightly healed and the fourth showed puckering and thickening of the edges with granulation in the base. Mucus obtained contained red blood cells but no amebas. Proctoscopic at the end of the week of rest showed further but not entirely complete healing of ulcers. Mucus examined for vegetative amebas and formed stool for cysts with negative results. In the first two weeks of treatment he gained 3½ pounds, appetite and general health are felt to be greatly improved.

SUMMARY AND CONCLUSIONS.

The early effects of the treatment of eight cases of amoebic dysentery with yatren 105 is reported as a preliminary note. Five cases were in the first attack, four of these had had symptoms for from ten days to one year; the other had had constant symptoms for 12 years. Three cases had had previous attacks, one patient 5 attacks in 6 years; one had had one other attack within one year; the third had had three in the past fifteen years, one of these had been treated many times very thoroughly with ipecac, emetine and stovarsol; the other two had probably had a little treatment with ipecac or emetine. Seven showed ulcers in the rectum. In all cases typical vegetative forms of endamoeba dysenteriae (histolytica), motile and containing red blood cells were found.

In most of the cases the routine of treatment was as follows: Yatren 105 was given by mouth, 1 gram three times a day for the first and third weeks; during the second week no medication was given. Only two cases were kept in bed and on a liquid or soft diet.

It was noted that during the first week of therapy acute symptoms were relieved and the ulcers showed rapid healing.

All gained weight during treatment, some with remarkable rapidly. All remarked their great improvement in appetite and general feeling of well being.

Iodism or other unpleasant symptoms did not develop.

Regarding the permanence of cure effected by treatment with yatren 105 little can be said at present. It has been one month or more since treatment has been completed in six cases, five of these have been followed, none have shown clinical or microscopic evidence of acute or chronic amoebiasis.

The prompt relief in all cases and especially in Case 1 indicates that yatren promises to be a very valuable aid in the treatment of amoebiasis.

We are indebted to Dr. C. C. Bass for suggesting this study and for his stimulating interest; to Drs. Johns, Cole, Bethea, Musser, Fossier, Bel and Bradburn for their kindness in allowing us to study their patients; without their co-operation this study would have been impossible. We are grateful for the invitation to present this note before your society.

REFERENCES.

Mühlens, P., and Menk, W.: Uber Behandlungsversuche der chronischen Amoeben ruhr mit Yatren. Munch. Med. Woch., 1921, v. lxviii; 802-803.

Mello, Silva: (Cited) O tratamento das dysenterias amibianas chronicas pelo Yatren. Brazil Medico, 1922, v. xlvi: 1024-1028.

Kop, W. A.: Yatren in the treatment of amoebiasis. Amer. Jour. Tropical Med., 1924, v. iv: 256.

Kessel and Willner, Peking: Some clinical and laboratory aspects of amoebiasis with a preliminary report on Yatren treatment. The China Medical Journal, 1925, v. xxxix, 5.

Manson-Bahr: Recent developments in the treatment of amoebiasis. Tropical Dis. Bulletin, 1925, xxii: 259.

Manson-Bahr and Morris: Yatren in the treatment of amoebic dysentery. The Lancet, 1925, ccix, 5324.

DISCUSSION.

Dr. F. M. Johns (New Orleans): I feel sure that Drs. Turner and Jones have added another drug to our armamentarium in the treatment of amoebic dysentery and I am convinced that it is a very good drug. I believe it is a better drug than stovarsol, in view of the findings.

Patient No. 1 had stovarsol. I experimented with stovarsol with this same patient without effecting a cure. The relief was only temporary. But this patient is certainly remaining well, up to the present, following two weeks of yatren. I examined a specimen and saw him just day before yesterday.

I wish also to bear witness to another cured case. I had the pleasure of seeing an oil prospector from the Tampico oil field, infected with dysentery, and had been very severely ill for several months. He went into Mexico City. There he has given a two weeks course of yatren and discharged cure with a request for monthly examination for one year. He got here on the 11th month, and had remained well during this interval. He was examined several times, proctoscoped, etc., and I could not find any amebas.

I must say that the doctors in Mexico City are apparently far ahead of us in the most modern treatment of this infection.

With reference to the idiosyncrasy of stovarsol, I might say that I have heard of several cases, one in which I studied the reaction in detail. This patient had a definite psychosis, skin rash and fever, following the use of stovarsol. One or two developed rash and temperature, but with no mental symptoms. A particular case to which I would like to refer was that of a doctor in a neighboring state. He was diagnosed as having amebic dysentery and was put on stovarsol, four ¼ gram tablets daily for a week. Following this he took a week's rest and, on the third tablet of a second course, developed chill, coma and, a few hours later, a rash appeared on the body. The coma lasted four or five hours. The case was diagnosed as dengue fever. Upon recovery he decided he had better start on his stovarsol again. He took two tablets, one in the morning and one after lunch. He was brought home from his office about 4 o'clock, delirious, fever of 104° and a rash appeared about 1 o'clock that night. The next morning he was free from the delirium. At the end of the week he decided to start on stovarsol again. He took one tablet in the morning. That evening he had a hard chill, slight fever, but no coma. That night a beautiful measles-like rash developed. On the other hand, I have seen several patients who have through error been able to take from 1 to 1½ grammes a day for one or two months at a time.

In conclusion, I am satisfied from reports of German and South American physicians and from these cases, that yatren is another drug that can be used most efficaciously in this type of dysentery.

Dr. Randolph Lyons (New Orleans): I am very much interested in dysentery, for a number of reasons. This is a subject that may come home to a good many of us. In years gone by I can remember when there was hardly a case of amoebic dysentery seen by me which originated in New Orleans. In the last two years I have seen more dysenteries originating here than I have seen during fourteen or fifteen years before. I am not able to account for this, unless it is from some infected truck produce brought in here—lettuce, celery, etc.—which has not been properly washed and persons have been infected in that manner. I have always been interested in the new treatments for this disease, particularly in finding a drug that would be effective and not toxic. Ipecac and emetin will cure the disease but are toxic and have to be handled carefully. I have seen two or three cases of stovarsol poisoning. One patient developed a temperature of 104° with persistent vomiting and nausea, and a rash. I had another similar case and other cases of milder type of intoxication. I do not know anything about yatren. We see remissions in any form of treatment lasting for periods of months, and the longest case under treatment here is about eight months. It is too early to talk about ultimate cure or relapses with yatren. But if such an iodine preparation will control the disease within a short time and has no toxic effects that is all we can ask for the present. We are indebted to the doctors for introducing and trying this drug. As to toxic symptoms, we hope there will not be any; and in any event, certainly iodism is less serious than arsenic emetine poisoning.

Dr. C. C. Bass (New Orleans): At the time Dr. Turner first took up the study of the use of Yatren here, I believe there had appeared in the literature some eighteen or twenty articles on this subject. These were available to us only in the form of abstracts. There are certain advantages apparently of Yatren over other available specifics recommended for amebic dysentery. One of these is its apparent non-toxicity. It would be very unusual indeed if we should fail to find idiosyncrasies to iodine in this form. However, none of the publications or abstracts that we consulted mentioned toxicity. It is supposed to be non-toxic.

This drug has been used by Muellens of Hamburg and others for about three years. Publica-

tions that were available to us up to some eight months ago did not report a single failure of result. So Yatren seems to be not only non-toxic, but it seems to give a higher percentage of arrested cases than the other previously used drugs. Of course, Dr. Turner's observations have extended over too short a time for one to judge as to the permanency of the results, but the publications of Muellens and others reported cases that had been treated for very much longer periods of time without relapse. It would seem that cure is certain with Yatren, more so than with the other specifics at our disposal.

There is still another advantage in Yatren and that is its simplicity of administration. I believe that with the exception of one or two cases, Dr. Turner simply gave the patients hospital diet and allowed them to be up and about. In employing emetin and ipecac, especially the latter, hospitalization is almost unnecessary. Emetin may be given without the patient being hospitalized but giving intramuscular or hypodermic injections is required. It would seem that the advantages of Yatren are as great if not greater than those of any other remedy that has been used in the past.

Dr. A. L. Levin (New Orleans): The discussion tonight on the treatment of amoebic dysentery presenting facts in favor of the new drugs and in condemnation of the old method of treatment reminds me very much of the medical and surgical treatment of cancer. We know very well that cancer is not a curable disease unless recognized early and the surgeon's knife, X-ray or radium applied energetically. Even in these instances we quite often meet with failure.

Amoebic dysentery, as we know, is a very stubborn infection with a strong tendency to recurrence unless the eradication of the parasite is made early and as completely as possible. The fact that the speakers tonight mentioned one or two cases of recurrence when ipecac and emetin was used does not convince me that ipecac and emetin after all is not the best that we have in our armamentarium to cure amoebic dysentery. In the last fifteen years in my service, at the gastro-intestinal clinic of Touro Infirmary, I have seen quite a number of amoebic dysentery cases treated with ipecac and emetin. The results in a majority of these cases were excellent; no recurrence of the disease for ten or twelve years.

I am convinced that the best method of treatment unquestionably is ipecac and emetin, but I admit it is the most tedious, the most unpleasant, the most difficult treatment we have at our command. The newer treatments which have been recently suggested have a place. The time is too early to make a statement for or against it. There is no doubt that if we can adopt a method requiring very little effort on the part of the patient and physician to eradicate the parasite and obtain satisfactory results in the shortest possible time, we should adopt the reform plan and abandon orthodoxy.

My view of the entire subject can be summarized as follows: Very chronic and stubborn cases where the amoeba have penetrated deeply into the tissues or are hidden in the lumen of the appendix where no medicine can reach them are often not amenable to any form of treatment. Appendectomy, appendicostomy or cecostomy is often advisable in these cases.

Ipecac and emetin are by far the best so far, because we know by many years of experience that it is the surest. The arsenical group of drugs such as stovarsol and treparsol unquestionably should have a place in our armamenarium of drugs if good results from the administration of these drugs have been obtained. Whether the cure is permanent or transient, time will tell. The danger in the arsenical drug is arsenical poisoning; more with stovarsol than treparsol because the elimination of the former drug by the kidneys is slower than the latter, hence absorpton of arsenic and symptoms of arsenical poisoning. The dosage of these drugs, we do not know. We are trying, experimentally, three tablets per day. If symptoms of poisoning develop, use one per day or less for a longer period. It is only in an experimental stage. I have used lately treparsol in a number of cases with good results giving two tablets per day for seven days and six injections of emetin, one grain each, for the same period; then a period of seven days rest, then another period of treparsol, one tablet per day without emetin and another period of rest for seven days, and the third period is a ten day period of one tablet per day without emetin. The patient does not have to go to bed nor change his mode of living, can remain on normal diet and does not lose any time.

Yatren is probably another drug which will demonstrate its value but we shall have to wait months or years before we can attest our approval of yatren as a specific in amoebic dysentery. All we can say at present is that it relieves symptoms.

Dr. Johns condemns stovarsol because we had a few cases of arsenical poisoning. We also remember numerous cases of poisoning we had when we first started the use of 606. I remember fatal cases which occurred from its use. We know now its value, and it is possible we will know the value of stovarsol better in the future than we know it now. In this relationship I wish to relate briefly the following case:

A little over a year ago a middle-aged gentleman presented himself for treatment for a condition which was considered by leading men in the city, including Dr. John's himself, as one of pernicious anemia. The usual method of treatment of such cases was tried. Blood transfusions given a half dozen times with absolute failure. Some one, in a joke, suggested the use of stovarsol, which was tried. He has taken 75 tablets of stovarsol in a period of several months. Since the beginning of its use the patient has apparently regained his health, gained about forty pounds in weight and is able to pursue his work.

I wish to thank the essayist and Dr. Bass for bringing this subject before us tonight. It is of great interest to all of us, and if yatren can prove its efficacy in amoebic dysentery we shall add this drug as one of merit in the above disease.

Dr. P. H. Jones (closing): The dose is one gram, three times a day.

There is nothing I can add, except to make a remark along the lines of the cost of the drug. It (according to weight) costs about as much as stovarsol, but we give four times as much of it. As to the effects of the drug: it seems to encourage the patient to desert before treatment is finished, since they feel so much better. The cases we had all seemed to be of domestic origen. They were not travelers in foreign lands.

Yatren is easily given; in that manner we may be able to accomplish more cures than with the tedious treatment formerly referred to.

TREATMENT OF CANCER OF THE CERVIX UTERI.*

J. S. ULLMAN, M. D.,
NATCHEZ, MISS.

To anyone at all familiar with the literature on the subject of cancer it is evident that we have made no real progress in so far as we are able to find the cause of this scourge, nor can we say that we are entirely satisfied with our means of combatting it. Until we shall have found its cause and shall have secured a means of cure, or of prevention, this disease will continue to be one of the biggest problems that the medical profession has to solve. In spite of all the weapons that science has given us to use against this dread malady, which year by year is exacting an increasingly heavy toll of the human race, we are forced to admit that our results are not satisfactory.

No method of treatment at our disposal today is to be considered curative unless it be instituted in the very beginning of the disease. Too many patients are not seen until the condition is definitely established, with the result that our efforts may be directed toward nothing more than palliation.

In no pathological entity, today, is early recognition of greater importance than in this. Again and again the surgeon, the radiologist and the roentgenologist have insisted that if anythng approximating a cure is to be expected the patient must come early. Obviously, then, the laity must be taught the importance of this.

It is strange that while practically every woman recognizes the need of examining every lump in the breast, or every sore nipple, very few indeed will investigate symptoms of trouble in the pelvic organs until too late.

It has been well said that "the medical knowledge of yesterday is the lay knowledge of today." But our experience tells us that when we find the three symptoms of pain, odor and hemorrhage, it is too late. Every physician should teach his patients that pain is a very late symptom of uterine cancer, and so is the odor. Why is it so hard to teach the laity that the menapause should be as uneventful as the establishment of puberty? Is the physician to blame? Has he been insistent enough as to the necessity of thorough examinations? Is the "wait and see policy" really giving the patient the benefit of the doubt? Every woman should be brought to suspect any increase in menstrual flow, or any bleeding during the interval. The investigation of leukorrhea is of great importance too, for thus will many a case of eversion of the cervical membrane, laceration and ulcera-

*Read before the Mississippi State Medical Association, Jackson, Miss., May 11-13, 1926.

tion be discovered at a time when they may be corrected before they become malignant.

The first phase of our task then is so to educate women that they will present themselves for treatment in time. Let them understand that in the light of present-day knowledge *the time to cure cancer is before we are certain that it is cancer.*

Turning now to the second part of our problem, the question of cure, it may safely be stated that the majority of gynecologists today are depending upon radium as the method of choice in carcinoma of the cervix uteri,—as a curative agent when the patient is seen early, as a palliative measure when seen later. In the most skillful hands there were not more than 25% or 26% operative recoveries from the Wertheim operation. In the case of the simple panhysterectomy, while the operation is not so formidable, the end result is not so satisfactory. But on the other hand the application of radium does not endanger life, causes little or no discomfort, either during the time that it is in place or after the treatment, to say nothing of the short time necessary to be spent in hospital.

Radium may either destroy the cancer cell or may restrain its growth. It also promotes the formation of fibrous tissue, which when fully organized completely encapsulates the cells, that may not have been destroyed entirely. Also in contracting, it lessens the blood supply to these cells. This is more than can be said of surgery. Whether by knife, or by the electro-cautery, if the excision leaves behind any malignant cells, we are almost certain to have metastases later.

When available the high voltage X-ray, popularly known as the deep therapy treatment, should be used to cross-fire the pelvis from several different portals. This treatment used soon after the radium will in most instances take care of the metastases.

It is of the greatest importance that both patient and family physician be brought to realize the necessity of frequent and regular observation of the patient, preferably by the therapist, himself. While it is the aim of practically all radiologists today to destroy the growth by a single application this is not always accomplished, and it therefore becomes necessary that the radium be reapplied at the proper time.

MALIGNANCY.*

W. W. CRAWFORD, M. D.,
HATTIESBURG, MISS.

It may be of interest to note that the

Total number cases cancer reported in Mississippi in period 1914 to 1925 was	18,369
Total number deaths reported in Mississippi, period 1914 to 1925	8,372
45% of total cases reported during that period have died.	
Total cases reported in 1925	2,054
Total cases reported in 1914	1,555
Increase in reported cases in 1925 over 1914	24.3%
Deaths reported in 1914	554
Deaths reported in 1925	829
Increase in number of deaths 1925 over 1914	49.6%

Ten counties showing largest number of cases reported 1914-1925 are:

Hinds	1,399
Warren	856
Bolivar	775
Adams	762
Washington	708
Coahoma	679
Forrest	628
Holmes	607
Pike	505
Yazoo	479
Total	7,398, or 40% total for State during that period.

*Read before the Mississippi State Medical Association, Jackson, Miss., May 12-14, 1926.

Ten counties reporting smallest number of cases, 1914-1925 are

Stone	21
Perry	23
Benton	28
Humphries	38
Wayne	45
Choctaw	47
Green	47
Rankin	48
George	49
Webster	50
Total	396, or 2% of total for State.

There are 45 public and private hospitals in Mississippi. A questionnaire was sent to each of them. Among other questions each one was asked the number of cases of cancer of all kinds applying for treatment in 1925. Replies were received from eighteen, and included all the charity and most of the larger private and semi-private institutions. A total of 861 cases was reported. Presuming, as a minimum, that 166 cases applied to the hospitals not reporting, we note that 1,027 or 50% total cases diagnosed in Mississippi in 1925 applied for treatment in the hospitals. Of 861 cases reported from the hospitals there were

304 cervix uteri

67 uterus

95 breast

52 stomach, a total of 418 for these four organs; almost fifty per cent of entire number reporting for treatment. Of the 861 cases there were 544 whites and 272 colored.

From the above data we observe that, despite the fact that while many of the 18,369 cases reported were minor skin cancers, all of which are curable and many of which were no doubt cured, 45% of the total number have died during the twelve year period. We note that while reported cases have increased 25.3% the deaths have increased 49.6%.

If we consider the number of cases that do not apply for treatment, those that are not properly diagnosed, and a reasonably large group that involve internal organs, and are the remote cause of death even though not recognized, the above figures would no doubt be materially increased.

It may occur to some of you that the Bureau of Vital Statistics in Mississippi is functioning better than in former years, and that affords explanation for the seeming increase in cancer. That is true, but the same efficiency that may be responsible for an increase in the total number of deaths is in evidence in the collection and tabulation of living patients with cancer. It therefore seems apparent that our State is no exception to the accepted fact that the death rate from cancer is increasing throughout the civilized world. This observation affords added cause for alarm in view of the fact that both profession and lay public have become more keenly alert to their responsibilities in the matter, due to the activities of the public health service, the American Society for the Control of Cancer and other agencies.

The treatment of malignancies and premalignant conditions has made definite progress during the past decade, and no doubt many more cases are being cured in certain groups than in former years. But despite this fact, the death rate is advancing throughout the country at the rate of 2½% per annum.

ETIOLOGY.

Multiplied millions are being spent in our research laboratories, but, aside from the more or less spectacular reports of new discoveries at intervals, discoveries that do not meet the acid test of investigation, we find the profession in the same uncertain attitude with reference to etiology as that which confronted scientists when Conheim promulgated his inclusion theory.

Accepting the proven fact that all cancer cells belong to the embryonal type, Durante

claimed that injury or irritation may cause normal cells to revert to the embryonal type and thus become cancer. The reversion of type was not accepted by scientists, but in the light of our present knowledge, prolonged irritation is regarded as an important, if not the most important factor. The frequent development of cancer of the lip, cervix, gall bladder, etc., seems to lend force to the irritation theory. Even prolonged irritation from X-ray and radium may produce cancer. The essayist saw a man not long ago with cancer on the dorsum of both feet, resulting from prolonged exposure to X-ray, the primary condition being eczema.

Heredity has long been regarded as a factor in the production of the disease. So many instances where a number of cases have been reported in the same family have been recorded that one cannot afford to dismiss it as a potentiality. Da Costa says, "Heredity is an extremely uncertain influence, though not an influence to be denied."

The exhaustive study of Dr. Maud Slye of the University of Chicago on heredity of cancer as it applies to mice would seem to prove that it is a factor of serious significance. It has been suggested that one should at least be reluctant to marry into a family with a cancer history. This would seem to be especially important if such an individual's family was also contaminated by this disease.

Barclay of Manchester presented a very interesting paper on the etiology of cancer at the last meeting of the American Medical Association. His discussion, though largely theoretical, is worthy of consideration. He thinks the condition that we diagnose as cancer is merely a local expression of an unknown factor in malignancy that he designates as a hypothetical X. The surgeon may remove the individual lesion with the knife or by the application of radium or X-ray, but so long as this mysterious X is present in the blood, the patient will continue to be ill, and finally succumb, even though he may not develop evidence of local recurrence or metastasis. He insists that for unknown reasons the X may disappear after local evidence of cancer is seen, and that it is only cases belonging to this group that are cured by surgery, etc. In support of his theory he calls attention to the fact that after removal of any given cancerous lesion the disease may reappear in some portion of the body so remote that it defies any other explanation than that which is afforded by his X.

Luden of the Mayo Clinic thinks that certain chemical substances in the blood, notably cholesterol, influence the growth of cancer.

Borst, of the University of Munich, noted that when cholesterol was fed to rabbits it produced cancer nodules on the ears that had been previously irritated, whereas no such development was noted in the controls.

PARASITIC THEORY.

In spite of the fact that the research laboratories have not been able to isolate an organism that can be regarded as a constant factor in the production of cancer, there is and always has been a feeling on the part of many members of the profession that ultimately cancer would be classified as of microbic origin. Much of the research work has been conducted along that line.

Dr. W. B. Coley, in the March issue of the Therapeutic Gazette, says, "In an earlier paper published in 1893, I stated that the most satisfactory explanation was to assume that both sarcoma and carcinoma were of extrinsic origin, or due to some microbic cause or virus. For more than thirty years I have believed in this theory and clinical evidence strongly supports it."

Nuzum, of Augustana Hospital, Chicago, read a paper at a meeting of the American College of Surgeons in New York in 1924, in which he claimed to have cultured a

micrococcus from the cancerous breast of forty-one women and was able to produce cancer of the same type in the abdominal cavities of mice in thirty-eight instances, from these cultures, and in man once. In a recent personal letter he states that he has had further success in his work and hopes to be able to announce a serum at an early date.

Gye and Barnard of London announced a few months ago that they have discovered an organism that will be of epoch making value in the management of cancer. The most recent reports, however, are not regarded as being as full of promise as was at first thought.

TREATMENT.

Regardless of our interpretation of the etiology of cancer, the same fundamental principles should guide us in its treatment for the present.

Dr. W. J. Mayo says, "Every cancer is primarily a local disease whose removal, in the early stages, insures cure."

Bloodgood says, and I think truly, that by early recognition of the disease and those abnormalities that eventuate into cancer, the mortality can be reduced fifty per cent in less than five years. In order to do this it will be necessary that a systematic and intensive campaign of education be conducted among the laymen. Much is being done in isolated communities, but until the profession becomes more keenly alive to its responsibility the problem cannot be solved. Through information that has already been disseminated, the public is in a receptive mood and will gladly follow any program that may be outlined by the profession.

The ultimate goal should be periodic physical examinations for every man, woman and child in our commonwealth. This is not as utopian as some may think. I presented a paper to this Association five years ago, in which I advocated this very thing. Similar papers have been read on the subject before other associations since then, and at a recent meeting of the Board of Trustees of the American Medical Association a free discussion was given the subject. As stated, I am convinced that the public is ready, and it only remains for the profession to outline a program. Until such machinery is actually put into motion we can do much that will be helpful.

If every member of this Association will make three talks to small groups, women's clubs, parent-teachers' associations, schools, etc., during this year, it will bear fruit that will astonish you. During the past few years I have made a few talks on this subject and have been surprised at the interest shown.

The word cancer conjures a horrible picture in the minds of every one, and when the people are told that it is not necessary to have this disease, the question naturally arises, "How am I to escape?" Just here is where they are to receive their first lesson in regard to the importance of early and complete physical examinations. They should be told that if they will have small warts, moles and other blemishes about their body, removed, small lumps in breast removed, keep their teeth in good repair, and avoid all sources of chronic irritation, they may greatly reduce their liability. Women should be told that any irregularity in regard to their menstruation, any leucorrhea, or any tendency to cystitis, is of sufficient importance to be reported to the family physician. Just a year ago a prominent woman beyond sixty, who had passed her menopause many years ago, consulted me with a mild cystitis. Two months later she reported a small hemorrhage from the uterus that proved to be due to cancer of the uterus. Another patient consulted me in regard to a mass under the arm that proved to be a metastasis from a primary cancer of the breast that had entirely escaped her attention. The first patient was saved because she was treated early;

the second has died from a metastasis in the liver.

We must educate the public in the necessity of early physical examinations. In the meantime let us not forget that we owe it to the patients who are consulting us every day to be thorough in making our examinations. A patient may consult us about a minor matter. We may write what may be an appropriate prescription for the minor ailment, and the patient may be allowed to walk out of our office with an unrecognized cancer of the breast or uterus, or some other major trouble, just because we have not gone carefully into the history of the case. I am sure every one of you recall instances when patients have consulted you in regard to simple illnesses and have been surprised when your examination has revealed a condition of vital import. On the other hand, many women are so shrinking and timid that they frequently develop an advanced cancer before any examination is permitted. I see cases of cancer of cervix in my clinic every year that have the vagina and rectum already involved before a physician has been consulted. A woman consulted me last year with an advanced cancer involving the entire breast. The neoplasm had already ulcerated through the skin, and yet she had kept even her husband from knowing about the matter until a few weeks before she came to see me. These are deplorable pictures and in some instances are due to the conviction on the part of the patient that nothing can be done for them when they have cancer, and therefore they will hide their condition from the family and the doctor as long as possible. They must be taught the importance of co-operation with their physician. They must be taught that a large percentage of the cases can be cured, provided they report to the doctor for treatment.

Surgery, radium and the X-ray constitute our most dependable forms of treatment; surgery in the early cases; surgery reinforced by radium and X-ray in the fairly advanced cases; radium and X-ray in inoperable cases.

Statistics from the Mayo Clinic show that 72% of cases of cancer may be cured when operated while the disease is localized; whereas only 19% respond after even moderate metastasis has developed.

Almost 100% skin cancers respond to radium if treated before they have metastasized into the deeper glands. In cancer of the lip radium in needles, plus dissection of submaxillary glands and a few exposures to X-ray, yields excellent results.

Whenever possible do a radical operation for cancer of breast and properly distribute radium in wound for a few hours. This should be followed by exposure to X-ray to the limit of tolerance every two or three weeks for a period of several months. We have followed this plan several years and during that time have not had a single recurrence in wound area.

When the title of this paper was sent to the Chairman it was my purpose to devote the major portion of it to the discussion of malignant conditions of the uterus, with special reference to the application of radium; but when it was learned that three other papers to be read on that subject, I decided to abandon that idea. I wish to say in passing, however, that after trying every other plan from a radical dissection to the Percy cautery, I became convinced several years ago that the proper application of radium is so far superior to other methods that it has been adopted as the method of choice in all our cases, both early and late.

In 1891 Dr. William B. Coley of New York called attention to the treatment of malignancies, especially sarcoma, with the mixed toxins of erysipelas and prodigiosus. While this method of treatment has not

been attended with a high percentage of recoveries, yet, when we recall that it has been administered largely to inoperable cases, even his small number of cured patients warrants its use. In 1913 he read a paper before the International Cancer Research Conference at Brussels, in which he reported 710 personal cases with 80 cures, a little more than 10%. Since that date he has reported a number of additional cases and 125 have been reported by other physicians. We have used the serum at intervals during the past eighteen years, and while we have had only one cure in a metastasis following removal of a large sarcomatous ovary, we have used it as a prophylactic following operations for sarcoma and have not had recurrence, though, of course, it is possible that there would not have been any in these cases.

In February we opened an abdomen and found an inoperable sarcoma of ovary. Patient has been taking mixed toxins since that date and marked improvement has been noted, though it is too early to report the end result. Dr. Hightower and I are also giving it to a case of inoperable retroperitoneal sarcoma in the person of a young woman on whom he did an exploratory operation in March. The tumor has reduced in size, though no definite prognosis can be made this early.

Dr. Edward Oehsner of Chicago has been treating some cases with colloidal gold during the past two years and in a recent letter states that he has cured a few of them.

Dr. Blair Bell, of London, during the past few months, has reported success with colloidal lead. His experience, while encouraging, does not cover a sufficient period of time to be of value at present.

RADIUM IN TREATMENT OF CERVICAL CARCINOMA.*

J. P. WALL, M. D.,
JACKSON, MISS.

The lot of the woman affected with uterine cancer is a pitiful one; neglecting treatment she must endure the inevitable fatal course of a most loathsome disease. She nears the end of her torture, and learns when too late, that she might have received relief. Because of her belief in false prophets and fallacious theories, she has waited till her case is hopeless. This is one of the tragedies of every day surgery.(1)

In 1896 Henri Becquert(2) after carrying a radio--active substance in his pocket sustained a burn. It was this burn that gave Pierre Curre the idea that radium might be of use in medicine. Though tried many times it was not till ten years later that Henri Dominici actually demonstrated that radium therapy was an actuality, and that various depths could be affected by different degrees of filtration, and that such rays bear a relative weakness for healthy tissue, up to a certain point, while on the other hand they preserved all of their special action on neoplastic tissues.

Today radium occupies an indisputable place in the treatment of cancer of the cervix uteri, especially of the inoperable variety. With this most valuable agent there are wonderful opportunities for doing good, and equally distressing possibilities of doing harm, unless properly employed.

"The painful, often disastrous, and occasional fatal results that sometimes follow its application, should teach us that it is not a harmless remedy, and great care and training should be brought to its application."(3)

---

*Read before the Mississippi State Medical Association, Jackson, Miss., May 11-13, 1926.

Dr. James Ewing of New York says[4] "Radium is the first rational treatment of cancer ever devised."

"Its ability to relieve hopeless conditions of the pelvis has found no counterpart in the entire history of medical practice. When Madame Curre began the studies that gave this element to the world the sole means of relief meted out to these unfortunate women was opium in increasing dosage. While this did help the pain, it did nothing to decrease the hemorrhages, foul smelling discharges from the broken down cancerous tissue, which makes such a patient a great care and trial both to herself and her carers."[3]

Radium lessens

Pain.

Controls hemorrhage.

Decreases foul discharges and lessens odors.

Relieves symptoms, helps patient to be more cheerful.

In the average case of cancer of the cervix,[1] there is a large percentage of undifferentiated cells. Surrounding the cervix, in close proximity are the ureters, bladder, and rectum. Cancer cells emanating from the cervix, at a very early stage, so distribute themselves near and around these organs, that surgery, which is both radical and safe, is impossible. Radium by destroying the embryonic cells before it injures normal, mature cells, takes precedence over surgery in these advanced cases of cancer of the cervix.

Experiments conducted at the Middlesex Hospital, London, show that "Radium is able at any rate in some cases to arrest the advance of microscopic cells growing at the edge of the permeated lymphatics which form the advance guard of carcinoma."

Dr. Phfaler of Philadelphia has shown that "one of the advantages of radiation over surgery is that it can be used more intensively, and can be used especially to surround the growths."

Radiation treatment is practically painless, and consequently has a greater appeal to the patient, and many who refuse operation at first may be prevailed upon to submit to it after a preliminary course of radiation.

The British Medical Research Council in a recent report summarizes the wide variation in the practice of different hospitals: "Whereas from the surgical point of view, it may be of the first importance that the most probable tracks along which the disease extends be given heavy doses of radiation, much depends upon the radiologist's point of view upon how certainly these are known, and how large a dose of radiation may be administered with safety to the several regions of the body which are being invaded."

Dr. Case of the Battle Creek Sanitarium[5] says: "The ideal method of treating cancer will be one which while doing the greatest harm to the tumor does the least damage to the recuperative powers of the patient. * * * We have in radiation therapy a means of influencing the cancer cell itself and its environment. Not only do we reach the superficial neoplastic tissues, but this agent is one which has the power of considerable penetration; it can cause the malignant tissue to regress or die; it has an elective action for a great many of the varieties of cancer cells. When surgery fails it is because (a) recurrence or metastases develop, either the tumor has not been completely removed, or the mass having been removed clean to the border of visible or palpable disease, there remains behind invisible cell nests, or in the surgical manipulation traumatic transplantation of the malignancy has occurred; (b) once the operation complete and the healing complete, the role of the surgeon is finished, and he is really helpless against further eventualities; (c) in advanced cases it is on the face of such things useless to attempt

more than palliative treatment. * * * Radiation therapy counteracting these deficiencies in considerable measure, has a direct effect upon the tumor, and most tumors have at least some susceptibility to radiant energy; unlike the knife, it acts upon the depths as well as the superficial areas, exercising an elective selection for malignant cells, rendering later surgical removal safer, or restricting the area of malignant involvement so that often it is possible by later intervention to remove it surgically."

Five years ago I heard Dr. John G. Clark of Philadelphia say: "I have almost reached the point where I believe radium is the best treatment for all cases (speaking of carcinoma of the cervix uteri) regardless of the extent of the lesion. I do not feel, however, that I have reached the point yet where I am able to take the stand squarely in favor of irradiation alone, but I have so nearly come to this point, I very seldom do a radical operation." Last October, in Dr. Clark's Clinic I heard his assistant, Dr. Norris, make the statement, that they had not done a hysterectomy for carcinoma in that clinic for the past three and a half years, and he showed charts of the results with radium treatment, as compared with the former radical surgical treatment, and in the comparison the honors went to radium.

There are limitations to the application of radium and especially should it be remembered:

A. All cachectic patients bear radiation poorly.

B. Tissue subjected to previous radiation is much more resistant and this argues for the administration of the total dosage planned in any case, for 10-14 days.

Surgeons as a rule are slow to accept it as a palliative agent in advanced cases of malignancy, and even in their acceptance are rather reluctant, as more or less of a "Hobson's Choice."

Most competent observers are of the opinion that radium is the best palliative means we have in inoperable cancer, and as Dr. Howard A. Kelly says[7] "Palliation is relief more or less complete of distressing symptoms while the disease obviously remains to advance at a later date."

While we know that radium is the best palliative measure we have in inoperable cancer, we also know that it has curative powers that are not possessed by any other agent at our command in the treatment of cancer. The surgeon has been crying for years to have cancer cases sent to him early, and promising cure while it is localized, the same cry comes from the radiologist, and with the assurance that his statistics of end-results are equally as good and in many cases better than those of the surgeon.

In the use of radium we secure:

A. Gradual destruction of cells and fibrous replacement.

B. Necrosis when large doses are applied.

In its use a dose is given causing a maximum amount of destruction to malignant cells at the point of application and because of the short wave length and consequent penetrating power of the radium element, the force of this goes several inches beyond the point of application and so attenuates the cells it does not kill, that the tissues have an opportunity to build up antibodies against further extension of the disease.

There is a marked similarity between the changes that take place in a Peyer Patch during a typhoid infection and the changes that occur after the application of radium. You will remember that in a typical four-week course of typhoid fever that there is

A. Inflammation of the Peyer Patch.

B. Necrosis of the inflamed area.

C. Sloughing of the patch.

D. Granulation.

Dr. Henry Schmidt[8] has made some very interesting studies along the changes that occur locally after the application of radium, and they may be summarized as follows:

A. There is a serous infiltration, coming on as early as the third day, but usually the eighth to the tenth day.

B. The stage of degeneration of the cell nucleus, protoplasm and cell wall.

C. The stage of inflammatory reaction with a rapid growth of blood and lymph vessels.

D. The stage of repair, shown by replacement of the dead tumor cells with connective and granulation tissue.

The above processes occur successively, beginning within a few days after the application of the radium, and are usually completed within one to three months, but regenerative processes may be delayed because of improper technique or systemic reaction. The first two changes are due to the direct applications of the rays on each individual cell, and are an indication of more or less trauma, resulting in an immediate cessation of mitosis and later on of breaking up of the nucleus. The third stage expresses the reaction of the host to the injury done. It is an inflammatory reparative process and reaches its highest and most significant function in the phagocytic action of the microcytes and macrocytes, i. e., the leucocytes, the fibrolasts and endothelial cells. If this phagocytosis would be general throughout the tumor, the latter would be completely destroyed and removed. The fourth stage is the end stage, the regenerative process. Normal tissue cells fill the excavations in the tumor substance and the surface epithelium regenerates, or necrosis following, the healing results in scar formation.

The intensity of these changes depend upon:

A. Amount of element used.

B. Time of duration of its application.

C. Size and form of capsule.

D. Screening employed.

E. Distance maintained.

F. Extent and character of the growth.

G. An elevation of temperature indicates

   a. Complicating infection.

   b. Extensive destruction of tissue.

   c. Absorption of tumor detritus.

Concluding Dr. Schmidt says:

A. Degeneration observed in radiated carcinoma cells is fairly uniform and affects mainly the nucleus, and the cell is rendered harmless. It is an indication of the efficiency of the radium in the successful treatment of carcinoma, if a quantitative and qualitative homogeneous radiation has been applied to the entire cancer.

B. The reparative process in the disease tissue varies, depending upon the radiation dose and the reactive process of the patient.

C. Refractive results after a correct radiation treatment may be explained from lowered resistance of the patient. She can not activate antibodies that are necessary for the systemic reaction. A persist-

ent leucopenia means a bad prognosis. An absence of all constitutional symptoms indicates a system so weakened by the disease that treatment is hopeless.

If the work done in such centers as the Brady Institute, Johns Hopkins Hospital, Memorial Hospital, New York City, the London Radium Institute and the Chicago Hospitals, can be taken as an indication of what can be done, there is shown a marked benefit to all patients treated, and many cured, and especially is this remarkable as most of the cases are far advanced when first seen; and all cases were benefitted for a period of one to three years, then to die of distal involvment or some intercurrent disease.

In general, rapidly growing tumors of the cellular type respond more readily to radiation, but the end-results are unstable because of the danger of early and widespread metastases; growth with a tendency to early and wide metastases are unfavorable for cure; but growths with a tendency to remain localized and to late metastases are more favorable to radiation treatment.

Cancer of the cervix uteri may be classified according to the extent and the character of the lesion.

A. Extent of the lesion:

   a. With intensive involvement and fixation of the uterus.

   b. With lateral infiltration of moderate degree, without fixation of the lateral areas.

   c. Where the disease is limited to the cervix and mobility is not interfered with.

A rectal examination is necessary to determine the amount of mobility of the uterus and the extent of the involvement of the process. In the first group, operation can not do any good and always does harm in that it opens up channels for the dissemination of cancer cells; while the judicious use of radium will check the hemorrhages, relieve the pain and odorous discharges. In the second group the cures effected by the surgeon are indeed very rare, but radium may cure the cancer and always palliate it; in the third group radium gives a higher percentage of cures than does operation, minus the mortality and morbidity.

B. Character of the lesion:

   a. Endocervical, or medullary type.

   b. Flattened, ulcerative type.

   c. Proliferating, granulating type.

The first group originating in mucosa of cervical canal and forming circumscribed nodule growth and unaccompanied by any external ulceration has a predominating early symptom of slight uterine hemorrhage, followed by scanty vaginal discharge; vaginal examination reveals little more than an enlarged and somewhat nodular induration of the cervix; such a growth sooner or later breaks down, ulceration and degeneration rapidly occur and the cervix is speedily transformed into a crater from ulcer with the apex at its internal os; its walls are thin, hard and extremely friable; this is by far the most malignant form of the disease, as lymphatic infection takes place at an early date, and the base of the bladder becoming involved, vesico-vaginal fistula often results.

In the second group the disease manifests itself as a flattened, superficial ulcer with hard edge and a flat granulating base. It very much resembles a simple erosion, and is not infrequently mistaken for the same. This growth infiltrates slowly and tends to spread by surface extension.

In the third group we have the so-called cauliflower form which springs from the surface of the cervix, forming an irregular

fungating mass that is friable, and may also fill the vaginal cavity.

Like all new agencies in medicine radium has run the gamut of unwarranted enthusiasm to fatalistic pessimisms, but a proper evaluation of its effectiveness is being reached, and with your permission I would like to quote some authority on this subject:

Dr. Wm. S. Stone of Memorial Hospital, New York, says: "In addition to supplanting operation as the method of choice in a number of fields of malignant neoplasms, the use of irradiation has so limited the field of the applicability of the radical operation in numerous other cases that it is becoming a questionable procedure. In uterine cancer it is entirely eliminated—the use of irradiation therefore has made greater refinement in diagnostic work necessary."

Dr. Maxwell, from the Gynecological Service of the University of California, summarizes her findings: "From our review we feel warranted in concluding that radiotherapy has a definite place in gynecological therapeutics; we do not believe that it cures inoperable growths, but feel that it aids the patient by cleaning up the ulcer and arresting hemorrhage. This it does in the majority of cases. Death is usually postponed and a large proportion of the cases are temporarily relieved of pain. Even more can be expected of border line cases. Operable cases should be treated surgically, after preliminary radiation."

Dr. John Osborn Pollack[11]: "It is admitted that its use in cancer is established, and personally we feel that it is only a matter of time when it will replace operation, for all cancer is cured by the individual producing the immunity against the disease. This immunity operation breaks down and hence cancer grows, and metastases takes place, unless the removal has been complete."

Dr. John G. Clark: His clinic has not operated a case of uterine cancer for over three and a half years, and their results with radium are better than when they did operate these cases.

Dr. Wm. Mayo[12]: "Radium is taking the place of extensive operation for the cure of cancer of the cervix with the exception of the very early cases, and it is possible that it will soon be the method of choice in all cases either alone or combined with operation."

Dr. Louis Frank[13]: "In early carcinoma cervicalis, although radical operation continues justifiable in the hands of the best operators, equally as good, if not better, results, considering the primary mortality, are obtained by radium. Late cases may be improved and palliated by radium as by no other means at our command. If the five year period of curability is to be accepted as indicating a cure, then the results of radium treatment surpass by far those affected by the profession at large in the treatment of cancer of the cervix by surgical means."

BIBLIOGRAPHY.

1. Editorial—Surgery, Gynecology and Obstetrics: Vol. XXXIX, No. 3, page 137.

2. Radium in Dermatology—A. Schuyler Chart: Address before Post Graduate Hospital, New York City, Clinical Meeting, April 11, 1924.

3. Wm. L. Harris; Med. Jr. & Record—Nov. 18, 1925, page 595.

4. The Mode of Radiation Upon Carcino-Clinical Studies, Dr. James Ewing—From the Memorial Hospital, New York.

5. Radiation Therapy of Malignant Disease; Jas. T. Case, Bul. Battle Creek Sanitarium, page 544.

6. John P. Clark, Radium, Vol. 1, No. 3, page 247

7. Howard A. Kelley, Radium, Vol. II, No. 1, page 29.

8. Henry Schmitz, Radium, Vol. II, No. 2, page 177.

9. Wm. S. Stone, Radium, Vol. II, No. 2, page 159.

10. Maxwell, Radium, Vol. II, No. 2, page 132.

11. John Osborn Pollack, Med. Record, Mar. 25, 1922, page 93.

12. Wm. J. Mayo, Radium, Vol. I, No. 3, page 267.

13. Louis Frank, Radium, Vol. I, No. 3, page 247.

RADIUM VERSUS SURGERY IN THE PATHOLOGICAL UTERUS.*

W. H. ANDERSON, M. D.,
BOONEVILLE, MISS.

Of all diseases that history records, of all diseases that we now know, of all human diseases that medical science has waged war upon, cancer has been the hardest to conquer, and today it remains the major enemy of the human race. Of all the organs of the human body, cancer reaps its greatest vengeance upon the human uterus, and in a double portion to the ones which perform the noblest human function, that of childbirth. By a pathological uterus we mean one that is impaired, sick or crippled. There are too many of those conditions to even mention, much less discuss. A short paper can only hope to serve the same purpose as the flapper's dress, cover a few of the most important points, and cause you to think.

In discussing this subject I am not bringing you any statistics. I have none on paper. This is to my discredit. But it should not mean that I, nor that you, do not have some fairly accurate knowledge of the pathological uterus. The time has come for the country doctor to keep records and compile statistics; but if you have not done this, it is not sufficient reason for you to put your head under the sand while the statistician and record specialist talks at your medical meetings. For verily I say unto you, that if you have to chose one, it is of greater importance to study the patient, as many of the general practitioners are doing, than to major on the history sheets and laboratory reports.

There is no subject of greater importance to more doctors than to know whether to operate, or not to operate, whether to use radium or not to use radium, whether to use both or neither upon the uterus that you see almost daily. The most important of all is how to keep the uterus healthy, non-pathological. This problem is so big and so complicated often times that we feel that it is beyond us. Men who have endeavored to study cancer from every angle, men who have made the minutest study of the different types of cancer cells in every variety of cancer in every organ of the body still feel mystified and helpless. Commendation, honor, and congratulations to those tireless workers, lovers of truth and sympathizers of suffering humanity. The pathological uterus is not unlike other diseased organs, it is cured best by prevention. The more familiar we are with the preventive methods the better we will know when to use radium and when to employ surgery. We would not give up even one specialist, not one careful laboratory worker, from the staff, but we must enlist the active co-operation of the general practitioner and the general surgeon, if we are to solve the problem. The general practitioner is better prepared to administer the preventive methods, practice better obstetrics, preach good hygiene and healthy living, get the people better born and better lived. He knows the history better, knows the family tree, knows better the material in the particular human automobile, knows better the kind of life the patient has lived and the conflicts through which the uterus has been. He knows better perhaps what this patient can stand; how much shock, how she will react to an operation, and better how to build her up and raise her general batting average after operation or after radium is used. All this in my opinion counts for a great deal more than the kind of stitch you take in your particular hysterectomy or your idea of the exact slant at which you apply your radium needle. The human organism that develops cancer most commonly is the one that is under par constitutionally speaking. Local irritation and infection may break down the constitutional morale. Cervical and vaginal is just as rational as oral hygiene. It is just as reasonable to apply a little silver nitrate

*Read before the Mississippi State Medical Association, Jackson, May 11-13, 1926.

to an excoriated cervix the first day it begins as it is to apply it to the conjunctiva. Millions of more cervical and vaginal cleanliness might mean multitudes less cancer.

Lacerations of the cervix with ectropion require surgery provided there is no malignancy, and in the early stage, maybe radium plus operation. Certain polypoid growths and certain types of endocervicitis are better treated by surgery. But broadly speaking in terms of malignancy of the uterus, an involvement below the internal os should be given radium as the treatment of choice, while those above should have surgery. From my limited experience in general surgery and radium therapy, from observation, from the literature and from conversation, radium offers a better chance in cancer of the cervix than surgery, while in benign tumors and malignancies above the cervix, surgery is to be preferred. If radium will destroy cancer cells, and I believe it will, the cervix furnishes the most ideal location to get the best results. Here you may get a strong irradiation in every direction for two or three inches without doing damage to other organs. The normal tissue of the cervix seems to stand radium exceedingly well. And again the abundant blood and lymph supply to the cervix along with its proximity to other structures make it almost impossible to remove it surgically without scattering some of the cancer cells into one or both of the channels, and, too, in an operation in which a total hysterectomy is done, there is more shock and more lowering of resistance, and thus the patient is not left in as good condition to prevent the growth of the wild cells when they stop in another organ, while with radium, especially in the early stage, the knockout is less and the radium is the best means we have to block the lymph and blood channels and to confine the cancer cells locally. Every stage of malignancy of the cervix is better treated by radium, unless there are complications above that prevent it, or possibly in a very young woman in the earliest stage with a very badly lacerated cervix, operation might be preferred in order to conserve the ovaries.

In the early days of radium therapy cancer of the cervix was thought of in terms of years, then later months, now weeks, and a little later perhaps it will be days and maybe hours as in appendicitis, provided there may be a method of staining the cells and using the microscope without removing a section. The early diagnosis is just as important for radium therapy for a cure as it is for surgery. The early diagnosis is our most important problem. If it could be done without taking a section it would be much better. Taking a section is a little operation; but like a little learning, a little cutting on a cancerous cervix, may be a dangerous thing. If the patient is past forty, and no complications in the fundus nor the appendages, the history, constitutional symptoms and local appearance are all in line for a malignancy, it is wise to go ahead whether you know you are right or not, know from section. If it is a case in which cancer is to be differentiated from an excoriation or early ulceration, a treatment test may be applied that will give valuable help. Use a gallon of hot water with one-half ounce of zinc sulphate and an ounce of boric acid—other antiseptics may be just as good—use with fountain syringe with bivalve speculum inserted, and follow with local application of ten percent silver nitrate, use every other day and if there is not a decided improvement in three or four treatments, you have good evidence in favor of malignancy. This is a good treatment to keep up after radium is used no matter what the stage. To build up the patient in every way possible constitutionally and relieve local irritation can not be too strongly emphasized. The old method of giving a patient all the radium that it was thought she could possibly stand and dismissing her never to return or possibly to come to see you in a year if living, was like the early treatment in syphilis, one shot and forever cured; like Uncle Jim Hatcher in the days

before the stock law, on the first day of April saturated the lousy yearlings with kerosene, touched a match to them, opened the lot gate and bid them adieu until the next fall. They didn't all come back.

There is one non-malignant condition of the cervix that I believe may be benefitted by radium, four to eight hours with fifty milligrams. This is the very large, soft, boggy, hypersecreting cervix. In chronic endocervicitis with laceration, surgery is the preferred treatment, even the best in stubborn cases if there is no deep laceration. In applying radium to cervix, pathology of the body, fundus and appendages are to be duly considered. In a patient under thirty-five with involvement of one or more of those, surgery might be preferred.

In non-malignant conditions of the body or fundus of the uterus, radium is exceedingly helpful in the so-called idiopathic menorrhagias in young women, and also the dysmenorrheas both of which in many cases have an intra-mural fibrosis as a background. Six to eight hours with fifty milligrams in tube in the uterine canal given just after the flow stops, works wonders. Some of the good results may be due to a regulating effect on the ovaries, or in some other unknown way may have a good constitutional effect. In symmetrical fibroids of the uterus no larger than a cocoanut, radium is the treatment of choice provided the patient is near the menopause and provided there are no contra-indications in the appendages. Many use radium in much larger fibroids and in small nodular fibroids. In my opinion radium is being used in many of these non-malignant cases where surgery would serve the patient better. There needs to be a more careful history and a more careful examination of the cases who "flood from the Change of Life." This flooding may not always be caused by gray hairs. It may be a fibroid tumor no larger than your thumb, but this one little tumor may be sub-mucous, intra-mural and sub-serous, in other words may extend through and through the wall of the uterus. But this type of tumor in the wall of the uterus, would better be removed by surgery. It is only the small symmetrical ones that are ideal for radium. Malignancy of the uterus and its appendages are better treated with surgery, if they have not passed the operable stage and if they have passed the stage where any method will avail very much. Many small fibroids, and in some cases very large ones, may be removed and the uterus left in a functional state. No doubt more myomectomies should be done in young women. Radium therapy may be supplemented to advantage in some cases with the X-ray, in the advanced carcinomas of the cervix and in cases having pain in the sacral and the lubar regions.

For a partial and a brief summary: In pathological conditions of the uterus, in a vast majority of cases, either surgery or radium alone is to be employed, radium being used in some cases of uterine bleeding to check flow until patient may be put in better condition for operation. In a vast majority of cases radium alone is employed in cancer of the cervix regardless of the stage at which it is found, operation being employed in some cases when the patient is a very young woman and the malignancy is in the very early stage, or there are pus tubes or fibroids or some condition contra-indicating radium. Idiopathic bleeding and dysmenorrhea in young women and symmetrical fibroids up to size of a cocoanut in women nearing the menopause, should have radium therapy. Other pathological conditions in body, fundus and appendages of uterus including carcinoma of body and fundus should have surgery. A most careful examination should be made to determine which is to be preferred in each case since there is danger in the shock of radium and operation both lowering the resistance of the patient to where a few remaining cells might be more dangerous. A great deal of attention should be given to prophylaxis of pathological condition of the uterus by keeping up the body resist-

ance, by better obstetrics and by more scrupulous local cleanliness. Careful study by the general practitioner should be made of these conditions and of the hereditary tendency to cancer, the doctors in the country and small towns having a better chance to observe this, perhaps, than the specialist in the city who has a more floating clientele. After radium or surgery in cancerous conditions of the uterus, much attention should be given to local and general hygiene and to building up the body resistance of the patient since it is very probable that a person may inherit or acquire a constitutional tendency to cancer.

DISCUSSION.

Dr. A. G. Payne (Greenville): I feel the pendulum is swinging to the destruction of this dreadful condition by other means than surgery. I daresay if I were to ask the men in this audience to take a stand on one side or the other the majority of you would favor destruction of the cancer in situ rather than surgery.

Cancer in its early stages is a limited disease and any means of early recognition which will allow its early removal, the only known method of cure, is well worth our intense consideration.

Accurate knowledge of the cells' origin, the conditions which promote its proliferation, its attempts at differentiation, its invasive qualities and the body's method of preventing cancer, a service far greater than curing it. I am grateful to Dr. Anderson for calling attention to this phase of the subject and I am sure if we pay more attention to prophylaxis we would have fewer potential cancers.

The treatment of cancer is one of the most interesting, if not the livest problem in surgery today. The uncertainty of cure by any method is the bugbear of us all, and yet men talk about curing cancer. They seem to imply if we only had enough radium to apply to all these cancers we would put this terrible scourge of the human race to flight; we would not have to worry about inherited tendencies to the condition.

The introduction of new and valued agents of destruction into treatment has now increased the modes of attack to a point where we must decide upon the merits of surgery, or some other means, alone or in combination, which will destroy the growth in situ.

Surgery either as a primary effort or secondary to assist the introduction of destructive agents will always maintain a place in the cure of internal cancer because in no other way can the situation be determined. One can only see now by studying the literature that complete excisionists are pitted against destructionists in situ and vice versa. Trial experience and accumulation of data are necessary to test the value of these plans and locate their use. There is no question but what the study is activated by the highest motives, but it is usually true that concentration on one line, whether it be surgery or otherwise, leads to use without due consideration of the case.

The classification of cancer by Broders gives us a working basis as to diagnosis, treatment and life expectancy that we have not thought of dealing with this subject heretofore, and will in the future be of great advantage to us in giving prognosis. It accounts for our not understanding the many severe conditions that have withstood radical removal or destruction in situ, or gone by the five-year limit in apparently good health, while some of the seemingly milder cases have died early, although the same treatment was used with the seemingly more severe condition.

Dr. J. C. Crisler (Jackson): I have been a member of this Association about 27 years, and I feel that we have never had as fine papers as we have had this morning. I also enjoyed the address of Dr. Smyth, and I would like to inform him that the Senior Austin Flint was also from Natchez.

Dr. Crawford and Dr. Ullman have covered so thoroughly the general discussion of cancer that they have left little further to say. I can only emphasize what they have said. We so often see women coming to our office that have not been examined as thoroughly as they should. Cancer of the breast in women, a small lump in the breast—and it has been stated by those who know that more than 60 per cent. of tumors of the breast, regardless of how small, are cancer, or will be in time—a small nodule, is usually the beginning, something which the woman thinks amounts to nothing. One has to examine that breast before the majority of women will admit that there is anything wrong. I regret to say that I have allowed some women to go to where inoperable cancer of the breast finally came on, when I should have found it a year or two before. As Dr. Crawford has so well stated, cancer of the breast in women must be emphasized by the general practitioner, and this matter should be brought before all high schools and public schools. There should be lectures in the schools, and certainly in women's colleges, to educate them about this because we cannot get it sufficiently before

the general public—they do not read the literature concerning these things.

Dr. Ullman in his discussion mentioned pain as being one of the late symptoms of cancer of the uterus. We so often see cancer of the cervix uteri without pain. Any unnatural flow should call for an examination.

I agree with Dr. Wall that radium has a great place, but I cannot believe that it is the only treatment for cancer of the uterus.

Dr. Anderson advises the use of radium for excessive flow, but I think in the course of time he will change his ideas along that line.

Dr. W. A. Bryan (Nashville, Tennessee): I feel there are two sides to this radium-surgery proposition, but there are two points I want to mention where I think the profession is making a mistake. Here is a man—take Clark of Philadelphia, who uses 50 milligrams for 72 hours, and then Kelly says he uses 250 milligrams for 12 hours. But here is a fellow who only has 10 milligrams of radium, and he says, "I will use that five times 72 hours." Now I think a lot of doctors are being fooled in that way. That does not do any good.

Another point is the periodic examinations. That is the biggest joke—Mark Twain should have had it—these men going over the country saying everybody should be examined once a year. Who is going to examine them? There are about 120,000 active practitioners in the United States. You can take out about one-half of that number—specialists, men who have bad hearts and cannot go out at night, etc., and you have 60,000 doctors to examine 120,000,000 people in the United States. I am not saying it is not right, but if the doctors have to examine all these people who is going to wait on the sick people? It is absurd. Suppose the people said, "All right, we will all come in next year." It is hard enough now. The relief is, as Dr. Crawford said, you will not get everybody to do it. But I think there is a middle ground, and if you are reasonable a great improvement can be made in the way of detecting disease in the early stages. But you cannot examine all these people, there's no use talking.

Dr. J. W. Barksdale (Jackson): I heartily agree with Dr. Bryan with reference to the size of the dose of radium used. 100 milligrams is required as a working unit in the treatment of cancer, and while we may perhaps do almost as much good with a lesser dose, I believe the principle is correct that smaller doses over a longer period of time do not accomplish as much. The commission appointed by the American College of Surgeons two years ago to study the question arrived at the conclusion that radium at this time was giving the highest percentage of cures of anything we had at our command. The average dose that was being used was 100 milligrams for about 52 hours. They consider a minimum of 5,000 milligram hours should be used in any case of carcinoma.

I do not wish to appear as an advocate for or against radium, but I have not operated a case of cancer of the cervix in more than three years. Our tendencies are all surgical and it is hard to get a surgeon away from the operative treatment of cancer; he likes to operate and he regards with a certain amount of suspicion anything which prevents that procedure; but I have been so thoroughly convinced of the superiority of radium over operative procedure that I have not operated for cancer of the uterine cervix in several years.

One point I wish to emphasize is that a man must acquaint himself with the gross pathology. He should not only know microscopic pathology but gross pathology, and he should be able to differentiate between the various lesions before resorting to operation. How many cases come to you each year of mastitis, which you might say are cancer. But if you know your gross pathology you will recognize the difference and save the woman a useless operation. On the other hand, it is just as vital to be able to recognize the fact that a tumor is malignant, and govern your subsequent procedure accordingly.

Dr. John Darrington (Yazoo City): These have been excellent papers. I have never heard a better discussion of this subject.

It has always been true in medicine that the way to find a good remedy for an ailment is first to find the cause. That is the great stumbling block today—we do not know the cause of cancer and naturally we are working more or less in the dark. I believe when we consider the number of men, scientific men, laboratory and research workers, who are devoting their time to this subject, that we may hope that the time is not far distant when this problem will be solved. Cancer we regard as the greatest unsolved problem in medicine, not only the condition which carries with it the highest mortality rate, but when a man dies of heart disease he dies just once; but when he dies of cancer he dies a thousand deaths. The mental effect is so bad—just say "cancer" and the patient immediately loses hope, and when you take hope from a man he is in bad shape.

I am not going into a discussion of the merits of the various treatments—that has been thor-

oughly covered and I think we have a pretty clear idea of what we are accomplishing by our present methods; but I do say they are not sufficient to meet the requirements of these cases.

Radium is a vague and mysterious force—a remedy that benefits many cancer cases, but unfortunately cures very few. I hope the future generations will be spared this disease which is so terrible, and I want again to express my appreciation of these papers which have presented the subjects so clearly and have given us such valuable information.

Dr. J. S. Ullman (closing): I want to take this opportunity to thank the gentlemen for their discussion of my paper. A number of points were brought up, but in my paper I stated that I was speaking of the treatment of cancer of the cervix and uterus. The problem of treating cancer of the fundus is quite different from that of cancer of the cervix. Fortunately for us, cancer of the fundus is rather less frequent in occurrence than cancer of the cervix, but I feel that malignant disease of the fundus is much more amenable to surgery than it is to radium. A great many good surgeons today are using radium before the operation, as a means of prevention and as an agent which tends to make the operation more safe. Deaver inserts radium into the body of the uterus for about 1200 milligram hours, and then does a hysterectomy four weeks later. Lynch of San Francisco does practically the same thing, but does his hysterectomy in ten days. But in cancer of the cervix we all know that surgery has a much higher mortality rate than where the disease is confined to the fundus and you can do a hysterectomy; as I stated this morning, if you get your patient early enough she can be relieved.

Now as to what we call "cure," most writers on the subject today are trying to get the terminology standardized. One man speaks of a cure as soon as he relieves the symptoms; another man goes to the other extreme and says we must not consider a cure until the patient has been symptom-free and well for ten years. I think the rank and file of the profession today is of the opinion that five years symptom-free may be regarded as a cure. But from the patient's standpoint if you have relieved her pain and healed an ulcerated cervix, and if she takes on weight and strength and is able to resume her duties for six months or a year you certainly have accomplished something worth while.

As to the dosage and whether you shall needle or use the capsule inside of the uterus, that is a matter for the individual radium therapist to decide. Each man has worked out his own technique. If we start a discussion as to the details of the therapy there is no telling where it would end.

Dr. J. P. Wall (closing): As to when a patient is cured, we do not know; but the man or woman who takes treatment and is able to get around without symptoms is better than the one who has symptoms.

I did not say anything about the technique of application; I did not want to bring that into the discussion. As Dr. Ullman said, that is a thing for each man to work out for himself; but I do know that if you apply radium you will get better results. If you will take the statistics of the different hospitals you will see that. In the Pennsylvania General Hospital last fall Dr. Norris showed a series of cases that had undergone radical operative surgery for cancer of the uterus, showing a certain mortality and morbidity. Then he showed a series of cases treated by radium less than three and a half years, and not a single one operated, and the morbidity and the mortality were less. When you relieve discharge and hemorrhage and pain and make the woman more comfortable, you have done a good deal.

Dr. W. H. Anderson (closing): I am glad to see that we are so near together on this subject.

Dr. Crisler does not agree with me; but in the case of idiopathic hemorrhage in young girls we have to do something, and if we can use radium for a few hours and relieve the patient it seems to me it is common sense to do it.

As to the matter of using the needles or the tube, theoretically I believe operating scatters these cells and they get into the circulation, and we should be careful about disturbing those cells until the circulation is cut off. So in some cases it is advisable simply to lay the radium against the cervix rather than to dilate to be able to place it in the cervical canal.

One man spoke about massive doses. Two or three years ago the X-ray men were carried away with the large dose and deep therapy. They found they cured a good many cancers, but nearly all the patients died. I notice the more radium a man has the more he advocates using. I have 50 milligrams, and almost any ordinary work can be done with that amount.

Another important point is to decide whether you are going to operate or use radium. The reason is that the patient cannot stand too many knockouts. In the majority of cases you should either use radium or surgery and in this way conserve the resistance of your patient.

Dr. W. W. Crawford (closing): Referring to Dr. Bryan's discussion, I did not say in my paper that we should have annual examinations of all the people which would take up all the time of all the doctors. You will notice that I said periodic examinations. Periodic examinations are being advocated all over the country, and when we approach the point where we make periodic examinations it means that we are approaching the time when we will reduce our cancer mortality 50 per cent.' as Dr. Bloodgood says. The purport of my paper was to bring to each one of you present the responsibility you should have in your community to help let the general public understand that there is a chance for them to escape advanced cancer if they come to the doctor early and get the proper attention.

I do not think I am enthusiastic about anything, but I want emphatically to subscribe to what Dr. Wall has just said and what has been said by others on this floor with reference to the efficacy of radium in cancer of the cervix. That is one place in which radium is outstanding. Of course you can cure skin cancers with radium, but in cancer of the cervix we know we have an appalling recurrence; also a great many cases come to us when they are entirely beyond surgery, and in those cases as well as the early cases radium yields wonderful results. This is the experience of Dr. Clark of Philadelphia, who has done a great deal of original work in this line, and it is the experience of the larger radium clinics all over the world. We are not bringing you anything new, but we want to emphasize these things, because all of you are seeing cancer of the cervix every year.

In regard to Dr. Anderson's use of radium for hemorrhages in young girls, I say it is the outstanding treatment for conditions of that kind, and it can do the girl absolutely no harm. I have used it on young girls from twelve on up, and since I have been using radium in these cases I have quit worrying about the secondary anemias that come to you because of the fact that they have continued to menstruate—some of them practically all their lives. It is only a question of knowing how much should be administered. A small dose that regulates and reduces the quantity is all that is necessary, and when you have developed your technique along that line you can approach this problem with the same exactitude that you treat malaria and problems of that kind.

BREAST ABSCESS.*

WALTER EDMOND LEVY, M. D.,
[*From the Department of Obstetrics, Touro Infirmary.*]
NEW ORLEANS.

The breats abscess of lactation, in recent years, has come to be a rather infrequent complication. This is true, due to the excellent post-partal care that the parturient receives in the modern obstetrical hospital. Prophylaxis is the keynote of success in dealing with this complication.

So important are these prophylactic measures, that I feel it is not amiss to bring before you the outline of this particular therapy along with what may be a few original ideas.

Before proceeding with this, however, I should like to recapitulate a few well known and established facts. In the first place, let us consider the anatomy of the female breast. The virginal breast is almost hemispherical, and non-pendulous. The nipples are located about the level of the fifth costal interspace. The gland proper is composed of some 10-18 lobes; these radiate from a common centre, the nipple. According to Deaver, the glandular tissue of each lobe, consists of a system branching and ramifying dendric tubules. The many acini, resting in the gland loculi, give off small ducts which unite ultimately at the ampulla. From the ampulla, a single duct leads to the nipple.

The second point is, that pregnancy causes a great activity of the breast tissue. The breasts become much larger, and as a result, become more pendulous. The blood supply is also greatly increased.

The third point is, that the very enlargement, hypermania, etc., are in themselves predisposing causes for an inflammatory reaction. Add to these, the complication of

*Read before the Orleans Parish Medical Society, May 24th, 1926.

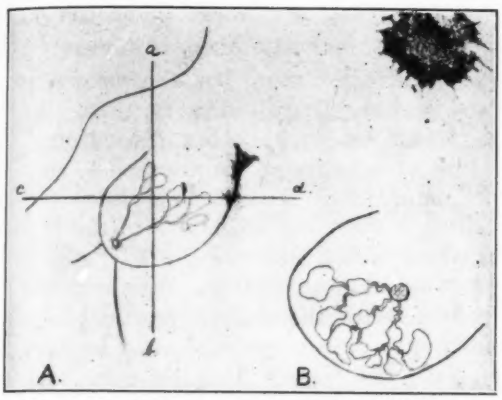

Fig. 1. A—The normal position of the nipple is at the point of intersection of lines a-b and c-d. The breast here has gravitated to the axilla and as a result, the milk ducts are put on tension and narrowed. B. Under surface of same breast. Here the ducts are thrown into convolusions.

cracked or fissued nipples, plus the ever-present bacteria, and it is rather easy to see how simple it is for infection to result. According to Deaver, two theories have been offered to explain the mode of entrance of the organisms; the one, that the bacteria enter the milk ducts, the other, that they enter the superficial lymphatics. He adds, however, the fact that primary lymphargitis is almost invariably associated with a cracked or fissued nipple.

Bearing these few facts in mind, let us now consider the various measures more in detail.

Prophylaxis: The proper care of the nipples and breasts is, as mentioned before, the best preventive of breast abscess. But right here let me pause a moment to make this statement: I am absolutely opposed to any massage or application of medication to the nipples or breasts by the patient before confinement.

Nipples: Cleanliness is here the sheet anchor of success. The nipples at all times should be covered and protected with clean dressings. Before each nursing they should be carefully cleansed with boric acid solution, followed by sterile water. After each nursing, the nipple should be washed with a 70% alcohol solution and then sterile water, and the dressings reapplied.

Fissured or cracked nipples should be treated immediately, for it is through these that the infecting organisms gain their entrance into the lymphatics. Personally, in case of minor fissures, I make use of an ointment of 5% recorsin in lanolin. If the nipples are badly cracked, even unto bleeding, they must be cauterized. In this latter instance, I employ a 25% silver nitrate solution followed by normal salt solution to care of the excess, or I use a 33 1/3% acetic acid, followed by a saturated solution of sodium bicarbonate. In either instance, I then recommend a nipple shield until complete healing has taken place.

Breast: The breast proper must also come in for its share of attention. If the breast is allowed to become hard and tense, caked breast, as it is commonly called, there is at once created an excellent situs for infection. For here we have heat, moisture

Fig. 2. Large, pendulous breast.

Fig. 3. Strap applied. Breasts are supported, and the nipple and the area about the nipple are easily accessible.

and protein material, and this, plus the entrance of organisms through damaged nipples, is the foundation of the breast abscess of lactation.

To obviate this, the breast should be properly supported. The normal position of the nipple is at the point of intersection of the mid-clavicular line with a horizontal line drawn at the level of the fifth rib. Now the average lactating breast, becoming larger and heavier, gravitated downillary region. This either puts the lacteal ducts on tension, narrowing their lumen, or throws them into convolusions, likewise preventing free flow of the milk. This tendency to the hanging down of the breasts must be obviated. They should be kept well lifted up from below and from the sides. As a result, the flow of the milk is much easier, and the venous congestion is greatly relieved.

At this point, it is the common custom of the vast majority of practitioners to apply a breast binder. On the maternity division at the Touro Infirmary, the use of the breast binder has been discontinued, and broad adhesive straps are used to support and maintain the breasts in the proper position. The chief objections to the old-fashioned breast binder are, firstly, it is a make-shift at best, and does not firmly fix the breasts in the desired position; secondly, with each nursing, it must be loosened and the breasts instantly drop back into the undesired position; thirdly, it is impossible to properly medicate the nipples, if necessary. Now with the adhesive straps, which were first suggested to me some years ago by Jellinghaus, all these objections can be overcome with ease. The breasts are permanently fixed, and as the nipples, and the area about the nipples are exposed, the baby can nurse on either breast without disturbing the supporters. Likewise, applications can be made to the nipples whenever desired.

If the breasts have become engorged and caked, however, I never make use of massage, topical applications, lotio plumbi, belladonna, or a breast pump. These measures are either more harmful than beneficial, or are worse than useless. A breast pump rather promotes the secretion of milk, thus in itself defeating the purpose of the treatment. The best line of therapy for the above condition is the application of the aforementioned adhesive straps, ice-caps to the breast, and a restriction of fluid intake, and a brisk saline purge. In the average case, after such a routine, the condition has usually subsided within twenty-four hours. This latter plan of treatment can also be used to prevent lactation in the event of still-birth, or to dry up the breasts in the event of the death of the baby after lactation has set in.

Once the abscess has formed, the treatment is essentially surgical, viz: incision and drainage, and not aspiration. The

operation of Shield, or a modification thereof, is the one choice. A radical incision is made either under local or gas anesthesia. The incision should be large enough to admit the gloved finger into the cavity, where a thorough, but gentle exploration should be made. The vast majority of breast abscesses are multilocular, and the septa must be cautiously broken through. Care must be taken, however, not to break down the natural barriers of defense at the circumference of the abscess.

Fenestrated rubber drain tubes are then introduced into the cavity, and if the true Shield operation has been done, one tube is brought out through a dependent stab wound at the mammary-costal junction. It is my custom, now to flush out the cavity through the tubes, twice daily with Dichloramine-T, of course protecting the surrounding skin. Once a day, the tubes are removed, cleaned, resterilized, and re-inserted. Use is never made of a gauze drain, as I am thoroughly convinced that after several hours, when the pus, blood, and serum has dried on it, it acts as a plug, rather than as a drain.

As a result of this treatment, a breast abscess can be cleared up with more rapidity than is usual. The average duration of a case treated along these lines is about ten days, as compared to one of three to four weeks otherwise. Furthermore, as the result of this rapid recovery, the breast is more quickly returned to its lactating duty, and has a normal usefulness for the rest of the nursing period.

In closing, I should like to emphasize the following:

Breast abscess is a very infrequent complication of pregnancy at present on well regulated obstetrical divisions. The prophylactic treatment is so well perfected, that the occurrence of such a complication may well be considered a blot on the professional escutcheon of the attendant.

Should such a complication occur, however, the rational treatment is incision and drainage, much after the fashion described.

DISCUSSION.

Dr. F. W. Parham (New Orleans): I have not had much to do with this subject and practice for a good many years, but at one time I did have a considerable amount of experience in treating abscess of the breast. I want to emphasize the fact that the essential thing is to support the breast. The picture which Dr. Levy showed with strips of adhesive going around, illustrates an excellent method, but it seems to me this would be very much better if, in addition, there were strips going up to the shoulder, so as to elevate more. Many years ago I was impressed by the bandage devised by Dr. Dulles of Philadelphia. He devised a routine systematic way of putting the bandage on. The first turn started from the axilla, passed up under the breast to the opposite shoulder, thence across the back again to the same axilla, thence forward above the breast cross the front to opposite axilla, thence across back to the starting point, when the first turn was repeated, each time drawing the breast up. A few figure of eights around

Fig. 4. Lateral view, showing how breasts are being supported straight out of the chest wall, even though the patient is in the upright position.

the breast completed a very effective compressing bandage.

This served a useful purpose: (1) It compressed the breast out toward the nipple, acting to empty the breast of stagnant milk.

Of course, after the breast has formed an abscess, treatment is difficult. You do not wish to let the baby continue to nurse. Therefore the whole attention in directed to stopping the suppuration as soon as possible. In doing that I believe hot compresses of boric solution put on hot and a bandage put on in a systematic manner, as described, will accomplish more in an abscess of the breast than any other plan.

It is good to have these old subjects brought up before us again.

WHO IS INSANE?*

J. M. BUCHANAN, M. D.,

MERIDIAN, MISS.

Should one go into a ward of an insane hospital, and ask almost any patient, not a dement, if he is insane, the answer probably will be no, and to prove his alibi, as it were, he will add that he is all right, but was sent there to get rid of him at home, or that those who sent him to the asylum ought to be there themselves. This is particularly true of these suffering from delusions and obsessions, but will not apply to those with anxiety psychoses, for, while they will deny that they are insane, they fear they may become insane if confined in the hospital. At the same time, if asked in regard to other inmates, they will readily admit that they are insane. So it is always you, and not I, reminding one of the old Quaker famous for saying, "Every body is queer but me and thee, and sometimes thee is a little queer."

I do not mean to say that every one is insane, but there are many suffering from an imbalance, who are not at all times able properly to adjust themselves to certain conditions, and environment, making them appear a little queer; all of us have hobbies, and we are by nature temperamental.

It may be of interest to you to know that psychiatrists now have more than 80 classifications and subdivisions of mental diseases, and when one is subjected to examinations by alienists, psychiatrists, psychologists, and psychoanalysists, they go back to early childhood, scrutinizing every trait of character, every thought and action of his conscious life; the psychoanalysist not being satisfied with his conscious self, dips into the subconscious, and essays to interpret the patient's dreams, giving significance to every sign and symbol, usually referring them to the sex instinct. When it comes to interpreting dreams, Joseph and Daniel are not in the same class with the modern psychoanalysist.

If one runs the gamut of these examinations, he is fortunate indeed if one of these 80 subdivisions does not fit his case.

LARGE NUMBER OF MENTAL DEFECTIVES.

It is now an old story, but the examinations of entrants in the late war revealed an alarming proportion of mental defectives in the country. Thirty per cent of those examined were declared to be unfit for military service, five percent of these were rejected on account of mental deficiencies. Those examined were young men, the flower of the country, and if such examinations were made of the whole population, men, women and children, no doubt the percentage of mental inferiority would be much greater. The largest number of those rejected on account of mental deficiency were feebleminded, and only the high grade or moron type were examined, as idiots and imbeciles were not drafted. Many of these morons were living quietly at home, and were able to adjust themselves to their environment in civil life, but under the strain of military regimen they weakened, and had to be sent home.

The next important class was the schitzophrenias, the dementia praecox group, in-

*Read before the Mississippi State Medical Association, Jackson, May 11-13, 1926.

cluding the subdivisions. Some of these were not recognized at first examination, and were accepted, but they soon developed psychoses, and were later discharged.

By far the most troublesome were the border liners, including the mild manic depressive psychoses, the neuroses, the psychoneuroses, the hysterical, the neurasthenics, the epileptics, the hypochondriacs, and the psycopathics with constitutional inferiority.

There will always be mental defectives in the population of every state; many of these become sociological problems, demanding segregation for the protection of society. To this end, most states have made some provision for the care of a limited number of idiots and imbeciles, with some education and industrial training for morons, and permanent segregation of certain types of defectives, who are dangrous and have sex tendencies. As a rule, the equipment of such institutions is meager.

In Mississippi while the Legislature made ample, indeed lavish, appropriations for the insane, when it came to the colony for the feebleminded, the members of the Legislature became positively parsimonious. A mental survey made of Mississippi in 1919 by Dr. Haines revealed the fact that defective people were found in the penitentiary, in jails, and poor houses, and feebleminded children were found in the orphanages, public institutions, poor houses, private homes, public schools and insane asylums, several thousand in all; yet in 1926, it was hard to get a small appropriation for a cottage for feebleminded girls. Dr. Ramsay has been trying to take care of about 200 of the thousands in the state, and is doing good work with his limited equipment. Are we upholding his hands in this great work?

It was not a bad idea when it was suggested to build one great insane hospital with colonies on the Rankin farm, and make the Meridian asylum a training school for defective children, and a home for incurables. I care not so much for the adult feebleminded, for nothing can be done for these, except custodial care. but I am intensely interested in defective children, for with these much real good can be accomplished. Dr. White of St. Elizabeth's hospital has said that youth is the golden period for mental hygiene, and the school is the place where this work should begin. Surveys in eastern states show defective children in all schools, and ours are no exceptions. These children are expected to adjust themselves to the work of the school, and try to take the regular curriculum, which is impossible. Not being able to carry on, they leave school and from neglect, become in a few years delinquents. Are we doing our duty and is it right for us to give millions for schools to educate the normal child and do practically nothing for the backward or abnormal child?

The time allotted to this paper does not permit giving a mental hygiene program for schools, so I must be brief.

As a starter in school hygiene, every child should be examined by a psychiatrist, either a physician, or a trained psychiatrict worker, and all children found to be backward, or defective, should be put in special classes, and taught only such things as would come within their mental grasp. Mental hygiene should apply to all pupils, taking into consideration, heredity, personal traits, degree of intelligence, eccentricities, special disabilities, environment and home care. This of course would be expensive, but if these children are neglected, we shall pay in the end. In truth, it is a question whether we shall pay in a way directed toward the control and prevention of delinquency, or whether we shall pay in crime, in courts, in reformatories, in prisons, in almshouses and insane hospitals.

There is no panacea for feeblemindedness, but much of the incidence of mental defect can be reduced by education and training and improving the home environment. Much more can be accomplished by preventing the unfit from marrying and repro-

ducing defective offspring. As a means for carrying out this idea, segregation and sterilization of the unfit is advocated, and some states have laws authorizing the sterilization of certain classes, but sympathy and prejudice have been too strong for the operation to become universal at this time. Eugenic marriages would be beneficial, if the law was universal, but if one state requires an examination, there is no law to prevent a couple going to another state where there is no restrictions. Valpariso, Ind., has become a Gretna Green for bordering states with eugenic laws—fourteen couples from Chicago were recently married there in one day.

Segregation calls for an outlay of money that no state could afford, to confine all of its defectives, but that is not necessary, for it has been shown that morons who have been trained, can live outside a colony without danger, and it is only necessary to confine the dangerous on account of vicious tendencies.

Feeblemindedness is hereditary, and there is now an imbalance between the birth rate of the feebleminded and normal people. Feebleminded women are very prolific, and as they do not realize the sin of bringing into the world defective offspring, they make no effort to prevent conception, while those who should have children control their birth rate.

The class we termed borderliners demand more serious consideration in the regulation and control of this large class of defectives, for many of these are able to adjust themselves to society and give no serious trouble. Their deviation from normal may not justify hospital care, and after reaching adult life nothing else can be done for them. Both segregation and sterilization would be impractical, and aside from an occasional loss of self control when some violent act may be committed, they are harmless, but may be troublesome to neighbors.

The advisability of total elimination of all who are mentally abnormal has been questioned by some authorities on these matters. It is claimed that we would lose much of the genius of the world, genius and insanity being close akin, for, as Ouida said:

> "People of great genius are always
> a little mad."

And Dryden declared that

"Great wit to madness is allied,
And thin partitions do their bounds divide."

Others have said that when suffering from delirium, or mental disturbance the mind takes higher and loftier flights of imagination, so the world would lose much of its brilliancy, wit and humor, as well as constructive ability in the sciences, arts, literature and state-craft. Sir Arthur Keith, anthropologist, in an interview, stated that "in the distant future, man would not be a superintellectual creature, but a person of robust physical constitution with much of the animal about him. Moreover, if everybody became hyperintellectual the race would perish. It was the animal instinct which had kept the genus homo on earth."

Yet what would the world gain by a robust physical constitution without some superintellectuality and genius. The biblical account of the first inhabitants of the world gives us such a physical man, when men lived hundreds of years. The biography of the oldest man says Methusalah lived 969 years and begat sons and daughters. Such longevity is not necessary or desired at this time. This is a day of activity where men accomplish much in fewer years. Who would give a life of four score and ten years like that of Wilson, Edison or Gorgas,—men who did things other than beget sons and daughters, for a thousand years like those of Methusalah.

LEGAL CONCEPTION OF INSANE.

The question of who is insane sometimes becomes a problem for courts, either in criminal cases or in a testamentary capacity.

The number of insane people found in penitentiaries and other penal institutions does not speak well for court findings in criminal cases. In fact, the proceedings in criminal cases are all wrong. There is no more reason why a man outside, who is insane, should be tried for a homicide, than an insane man in an asylum who has committed a similar offense. In all such cases, where the plea of insanity is set up as a defense, a commission composed of physicians qualified as experts should examine the man, and if he is pronounced insane, this commission should make their report to the court and that should settle the matter as far as criminal proceedings are concerned.

As it stands today, the unfortunate man is brought into court and tried by a "legal incompetent jury," men who know no more about mental diseases, than they do about typhoid fever or any other physical ailment. Very often so-called experts are summoned on both sides, and as these doctors may differ that only leads to more confusion. A commission would do away with this confusion.

The legal conception of insanity differs from the medical view. Usually the opinion of the court is based on what is termed the right and wrong test: That is, if it can be shown that at the time the homicide was committed the party had enough mind to know right from wrong and appreciated the fact of the punishment likely to follow, he should be punished. Medical men regard the trouble as a mental disease. He may know right from wrong and still be insane. While he may know he is doing wrong he lacks the will power to restrain his imperative impulses. If a knowledge of right from wrong is a test for sanity, then many of the inmates of insane hospitals should be set at liberty, for many of these know the difference, and appreciate rewards and punishment.

Let me illustrate these proceedings by a case in which I testified in court last year. The father of a boy about 21 years brought him to my office for examination. Dr. T. G. Cleveland was with me in making the examination. He gave the history of being in habit taking things, some of little value, and no service to him, usually he threw these things away or gave them to some one. Finally he robbed a country store after making plans for the robbery and disposition of the loot, and for this he was arrested and placed in jail. He made false keys and escaped, and it was while at liberty that his father brought him to me for examination. He gave a history of having been acting in a peculiar manner for some time; he had worked at odd times but could not hold a job and loafed, rambling about the country, was sullen and suspicious. We agreed that it was a case of praecox, that kind of dementia praecox, with suspicious, keen intellect and cunning, just such as make counterfeiters, automobile thieves and burglars. He was totally unconscious of his moral obliquity, and when I asked him if he did not know that robbery was a crime and he would be punished, he said "Yes, if you get caught." The father thought the boy was insane and tried to put him in the insane hospital, but habeas corpus proceedings failed, and the boy was put on trial. I was a witness in the case, but sentiment was so strong against him that I realized he had but little chance. The whole matter seemed to hinge on the question if he knew right from wrong. I admitted that he did but that he was unquestionably insane, lacking will power to restrain his impulsive acts. As an evidence of his sanity great stress was put on the fact that he had planned the robbery to a nicety, and that he had sense enough to make false keys to make his escape. For the defense I was asked if insane people cannot do these things. I told that in insane hospitals some are always planning to escape, and I had a man who was so expert at making keys that we had to put Yale locks on all the outside doors. As was expected, he was convicted, and the learned judge in passing sentence said: "I

could commit you to the insane asylum, but you are just a black sheep in a good family, and I am going to send you to the pen for one year." I wonder if that unfortunate boy was the only one in that court who was a little queer. Possibly the judge thought one year in prison would reform him. His father did not believe it, and he realizes that when the boy is released from prison his troubles will begin again.

Trials like the above indicate that we have made but little progress since the dark ages when they tied the insane to pillars in dungeons and beat the devil out of them, as the insane were supposed to be possessed of devils.

Insane people are not only sent to prisons, but are often hanged. Several years ago Dr. L. Vernon Briggs, of Massachusetts, wrote a very interesting paper on this subject, and I am making some extracts from that paper. He says that at one time in our history animals in the service of man could be arrested, indicted and tried like any other member of the household. In 1314 a bull belonging to a farmer escaped into the highway, where he attacked a man and injured him so that he died a few hours later. The ferocious animal was seized and imprisoned, and after being tried, was convicted and sentenced to be hanged, and the execution took place on the common gallows. In 1389 a horse was condemned to death for homicide, and as late as 1697 a mare was burned by the decision of the Parliament of Aix.

Now when we execute a non-compos or insane man, have we advanced much beyond the custom of seven hundred years ago when they excuted animals legally for crime?

Punishment is inflicted as a deterrent to others, and should not be governed by the old Mosaic law, "an eye for an eye," but if the execution of an ox for goring will prevent other oxen from pushing with their horns, or if the hanging of an insane man will prevent other insane men from committing homicide, then let us return to the old Mosaic law. The execution of the animal is just as logical as the hanging of an insane man. Courts are not always to blame, for we have had instances where society demanded execution of insane men, and there must be a change in sentiment before these cruelties can be corrected.

DISCUSSION.

Dr. J. H. Fox (Jackson): Dr. Buchanan's saying that it is always the other fellow that is insane, reminds me of a patient who was under the care of dear old Doctor Mitchell, for so many years superintendent of the State Hospital for the Insane at Jackson. He had a patient who had been committed there as the result of crime—he had killed his brother-in-law. This man was a man of prominence, he had once held a position in the county, and Dr. Ward, who was a friend of the family, visiting the hospital one day, stopped to talk to this man. He came down to the office and said to Dr. Mitchell, "Don't you know, that man ought to be set free—he is not insane." Dr. Mitchell said, "Well, we may have been mistaken, but suppose you go back and ask him why he killed that man." So Dr. Ward went back and said to him, "Why did you kill your brother-in-law?" "The Lord told me to kill him." "Well, if the Lord would tell you to kill me, would you do it?" "Yes, Dr. Ward, as much as I love you, if the Lord told me to kill you I would have to do it." And Dr. Ward came back to the office and said, "That is the craziest man I have ever seen."

The definition of insanity is something that has bothered doctors and lawyers and alienists for years, and the true definition is the old one. The student of psychiatry has not failed to observe the gradual evolution of the interpretation of that aggregate of psychical phenomena which we have come to recognize as insanity. We have been accustomed to class all mental disturbances under the term "insanity." In the early ages of insanity, observed and described purely in its psychical aspect, was looked upon as punishment inflicted because of the anger of the gods.

Dr. Buchanan touched on a subject that has been near my heart for a number of years, and that is the feebleminded child. I think Mississippi has made very rapid progress in that she has established an institution for the care of the feebleminded, but I do think that the Legislature is not awake to the enormity of this feeble-

minded question. There is hardly a month in the year that some poor mother is not placed in a position where she is unable to find a place to take care of this unfortunate member of her family, and with the small institution that we have at Ellisville we are only making a small beginning in caring for the feebleminded of this State. I trust every doctor of the State will take this to heart and try to exert his influence with the Legislature. It would be a humane thing if every member of this Association would in the future try to impress upon the members of the Legislature from their respective districts that an increased appropriation is necessary to take care of these unfortunate children.

SKULL FRACTURES.*

C. P. GRAY, M. D.,

MONROE, LA.

In presenting this paper on skull fractures it is not the aim or intention of the writer to bring forth, or advocate any new, or radical measures or opinions dealing therewith, nor am I making any attempt to discuss the causes and mode of action of the causes of skull fractures and shall only mention the location of one fracture in passing. But I do hope to call to your attention and impress upon your minds the application of some of the sound principles of surgery that are so beneficial in any condition associated with the symptoms resulting from a severe trauma, as is so often the case in skull fracture. I would also call your attention to the fact that the term skull fracture really does not carry with it the meaning it should, and in no way defines the condition present in the majority of cases of so-called skull fracture. I agree with Maclaire of New York when he says, "The term fractured skull no longer conveys the true significance of the injury in that no provision has been made for the possible associated trauma of the intracranial contents. To employ the term acute brain injuries also bears the same objectionable defect in clarifying the picture by omitting the state of the calvarium. Thus, it appears to me that the term craniocerebral not only is descriptive but also covers every contingency possible in head injuries." And again, do I agree with Percival Pott when he so aptly states, "The reason for applying the trepan springs from the nature of the mischief which the parts within the cranium have sustained, and not from the accidental division of bone." Malgaigne similarly expresses himself. So, then, I am using the term skull fracture for want of a better term and at the same time trying to bring before us again that it is not the fracture which so much calls for attention as it is the underlying tissue.

One reason for bringing this subject before us at this time is the large increase in the numbers of these cases occurring almost daily, not only in the cities and more thickly populated industrial centers, but on our public highways, due to the large number of people traveling by motor car from one section to another. No doubt many surgeons present can verify what I say when I call attention to the fact of a great number of injuries occurring from this cause within the recent past. This cause alone will continue to contribute an increasing number for so long as public highways are constructed and motor cars travel them, there will be serious wrecks.

Another reason for calling attention to this condition is the apparent lack of any concerted intelligent classification of cases from the standpoint of proper care and treatment of these patients. As one writer so nicely states, "In the past few years the tendency in the treatment of cranial trauma has been towards conservative measures rather than immediate surgical interference. The high operative mortality that resulted from rushing all serious head injuries to the hospital and performing subtemporal decompression has produced a reaction in favor of a more careful consideration of the indications for surgery in these

*Read before the Louisiana State Medical Society meeting, Monroe, April 15-16, 1926.

cases. Hitherto concussion and continued stupor with or without localizing signs pointing to the area of the brain injured, seemed to most surgeons sufficient reason for immediate decompression. As a rule no attempt was made to try to estimate the degree or nature of the injury or to formulate any rule upon which to decide for or against operation.

An intelligent and satisfactory classification of skull fractures and associated damage is hard to make. Grant in a paper on the treatment of fractured skull classes these cases in three groups. First, those which will be fatal whatever is done; second, those in which spontaneous recovery will result; third, those in which death will occur if no treatment is given but life may be saved by proper interference. Weaver groups his cases according to the classification as outlined by Donovan as follows:

Class A: Fracture with massive brain injury with evidence of rapid exhaustion of the medullary centers and death within from one to several hours after injury.

Class B: Fracture with definite evidence of middle meningeal hemorrhage.

Class C: Simple or compound depressed fracture with localized brain contusion and with or without indriven bone fragments.

Class D: Fracture with classic manifestations of rapidly increasing intracranial pressure which are well within the period of medullary compensation.

Class E: Fracture with definite evidence of brain injury exhibiting no classic findings of acutely increasing intracranial pressure, yet of the type that experience has shown is liable to develop increased intracranial pressure as the result of the accumulation of fluid.

Class F: Fracture with so-called concussion with no evidence of gross brain damage.

Class G: Depressed fracture of a mild degree with no symptoms.

This classification is rather drawn out but in my opinion it well serves the purpose to impress upon the surgeon the various phases of pathology with which we are likely to come in contact. To this classification I would add fracture of the base of the skull merely to call attention to it and further to state that in the majority of cases it is beyond surgical relief.

When we consider a fractured skull from any of the groups just mentioned I believe we are forced to recognize that in many, many cases the personal equation of the patient is lost sight of, and that the great principles in surgery are lightly applied. For instance, in the handling of these cases the injury to the nervous system and the shock present are wholely disregarded and the patient in many cases, subjected to a decompression operation with nothing done but a routine X-ray picture made. Bearing in mind "there is no skull fracture so simple but what will cause death and none so serious but what recovery may take place" it is imperative that we be familiar with the general symptomatology in addition to an X-ray examination. In fact an X-ray picture is not wholely and entirely to be relied upon in all cases. Recently I have had several cases with fracture barely detected by X-ray examination which later showed classical symptoms of a meningeal bleeding, found to be present upon operation. With the exception of a fracture with active bleeding, such as the involvement of one of the meningeal arteries these patients should be carefully and not too hastily studied. Shock should be treated, blood-pressure readings made, cord pressure taken and repeated neurological examinations made prior to operation. Rand reports a series of 171 cases of fracture with associated brain injuries in which operation was performed in 22% with an operative mortality of 47%. Consider this with the fact that Rand is a

close observer of his cases and gives considerable attention to the pre-operative treatment.

I thoroughly agree with Maclaire again when he says, "In attempting to discuss a rational procedure for the proper treatment of acute brain and skull injuries, one is immediately confronted with the existence of many diversified methods of treatment in vogue at the present time. Whenever such a discord exists and a generalized routine measure of therapy is not adopted or accepted by the majority of the profession, it merely indicates a lack of the proper comprehension of all the pathologic phases of pathogenesis of the condition, and it is to be expected that when such a state of turmoil is present every surgeon will naturally differ not only in his therapy but also in the time of application of his measures. The therapeutic indications become a matter of individual and personal equation. Such a situation should now be obsolete, and definite laws for the treatment of craniocerebral injuries should be as well established and firm as the treatment of acute appendicitis. To elucidate what is implied above, a single illustration will suffice for our purpose here. For instance, in the treatment of acute cerebral edema some men advocate dehydration solely in one form or another; others rely only on repeated lumbar punctures, while still others resort indiscriminately to operative measures and yet another group institute practically no treatment at all except rest in bed, with an ice cap and general observation, which at times really constitutes nothing more than ignorance and criminal negligence. Yet each group can not be entirely wrong all the time. They all possess their merits, which if incorporated into one plan of treatment would produce the ideal that we are seeking. The essential policy for us is to learn what to do and when to do it, so that the patient will derive the most benefit from our treatment and will be returned to as near economically and emotionally normal as possible under the varying circumstances of the nature of the trauma.

In dealing with a subject of this kind, the question of the degree of importance attached to skull fractures per se, aside from depressed fractures, immediately presents itself not only to the physician but also to the layman. We should all now be past that stage when the term fractured skull, except depressed fracture, looms up as a skyscraper in importance in acute traumatic craniocerebral conditions. Those of us who treat many cases of head injuries have come to realize that the patient is far more fortunate with a fractured skull, when a cerebral complication is concomitant, than without it. Very often his life is spared because of nature's method of decompression established by the fracture, and at other times surgical intervention is necessitated; the former is a natural decompression whereas the latter is an artificial one.

In conclusion:

Let us study the patient with a fractured skull more closely and arrive at a better understanding as to what to do, how to do it and the best time to do it.

Let us give more attention to the shock and disturbance to the central nervous system.

We should make more thorough and repeated neurological examinations.

We should not hurry the patient to operation except those with active bleeding such as meningeal involvement.

All skull fractures do not require operation.

A simple linear fracture with a moderate increase in intra-cranial pressure does not necessarily indicate operation interference.

A fracture with rapid increase of intracranial pressure demands attention either by de-hydration or operation, next in importance to those accompanied by hemorrhage.

A PLEA FOR THE ADMINISTRATION OF PROPHYLACTIC MEASURES.*

GILRUTH DARRINGTON, M. D.,
VICKSBURG, MISS.

It is not the purpose of this paper, nor do I entertain any hope of teaching the members of this learned body anything that they do not already know. I merely want to list the various prophylactic measures that we have at our command, and urge that the general practitioner insist that his patient receives them. The old proverb that an ounce of prevention is worth a pound of cure is absolutely true. We have many measures that are almost positive as preventives of disease, where, if the disease once develops, we are helpless to cure.

The responsibility of the practitioner begins before the birth of the child, and continues until he passes to the great beyond. The doctor owes it to the mother and the child before its birth to insist on regular examination of the blood pressure and urine of the mother, prescribing such medications and diets as the case may warrant.

Following birth of the child, the first prophylactic measure that should be used routinely is the instillation of 1% silver nitrate in the baby's eyes, as a preventive to gonorrhea neonatorum, and of course ample sterilization of the umbilical cord.

As the child grows older I think the following measures should be adopted at such time, as the doctor may deem advisable and appropriate:

1. Smallpox vaccination.
2. Diphtheria toxin-antitoxin (provided the Schick test is positive).
3. Scarlet fever vaccine.
4. Typhoid vaccine.

*Read before the Mississippi State Medical Association, Jackson, May 11-13, 1926.

The technique and time for smallpox vaccination is so universally familiar that it is not in the scope of this paper to go into details, as to its administration. The question of length of time that immunity lasts is more debatable and often arises for us to answer.

The immunity produced by vaccination varies somewhat with the individual. There may be a few individuals who are naturally immune, but these are rare and cannot be taken into account considering the question of smallpox from a public health standpoint. Vaccination done in infancy will confer permanent immunity in a certain number of individuals, but in others the immunity becomes weaker as time goes on so that in later life these individuals may take smallpox, if exposed to it. If they do take the disease it will be lighter and the mortality much less. There is no way at the present time to tell whether the immunity has worn off except by a repetition of the vaccination. Individuals who have been vaccinated at intervals until the vaccination done with active virus no longer takes, can feel perfectly sure of their immunity. This has been thoroughly demonstrated in cases of physicians and others who may be constantly exposed to the disease.

The question of vaccination after the person has been exposed to smallpox, has always been a matter of considerable interest. Hanna, from a study of the subject, concludes that vaccination done subsequently to infection with smallpox, will take up to the date of the onset. That the individual is afforded protection from smallpox when the vaccination is done within three (it might be safer to say two days) after infection takes place. If the individual is vaccinated for the first time during this period, it may not afford protection, but the case will be a light one. He believes that the disease is mitigated, even if the vaccination is done up to the onset, and possibly even later. Up to the onset of

the disease the vaccination runs an independent course. After the onset of the disease, the vaccination is as a rule unsuccessful.

The control and treatment of diphtheria is one of the greatest achievements of modern medicine; however, the improvement in treatment is out of proportion to the improvement in the control. The death rate from diphtheria is not over 17% of what it was thirty years ago; while the number of cases is not reduced to less than 2/3 of what it was. There is no reason for this if the medical profession will familiarize itself with the Schick test, and the immunizing by toxin-antitoxin, if the Schick test indicates it.

The Schick test is simply a test to tell whether a person has or has not enough diphtheria antitoxin in his system to make him susceptible to diphtheria. It consists of giving 1/50 of the amount of diphtheria toxin necessary to kill a 250 gram guinea pig; this toxin is given in 1/10 cc. of salt solution. It is usually given as an intradermal injection on the flexor surface of the forearm, just below the bend of the elbow. The needle should pass between the layers of the skin, just deep enough to cover the opening and so superficially that you can see the needle. The sign of a correct administration of the injection is a small raised whitish area, about 5/16 inch in diameter which develops and remains for some minutes; when this develops we know that we have the right technique. Because of the fact that sometimes a pseudo-reaction develops from the protein, it is advisable to use a control on the other arm of an equal amount, using a slightly larger amount of the heated toxin. The test is interpreted on the fourth day.

If there is a well marked redness at the sight of the injection it is called positive, indicating that the individual has a lack of diphtheria antitoxin and is susceptible to diphtheria. Faint redness indicates less susceptibility and no redness indicates absence of susceptibility, or immunity. The value of this test is two-fold in that it gives a sense of security to those who have a negative reaction, and second it prevents the unnecessary use of the immunizing agents.

However, if the patient has a positive Schick reaction, he should receive the immunizing dose of toxin-antitoxin, which is very simple, consisting of the subcutaneous injections of 1 cc. of the toxin-antitoxin mixture given at weekly intervals for 3 injections. Each cc. of this mixture contains 1/10 L plus doses of the toxin, with a sufficient amount of antitoxin to completely neutralize it. The L plus or lethal dose means the amount of toxin that will kill a 250 gram guinea pig. It will be noted that the dose is not increased weekly but is the same for all the injections. This will give active immunization to those having positive Schick test in 80% of the cases in three months, 50% of those who did not develop immunity will do so in one year; the remainder should get a second series and all these will get an immunity. However, we will occasionally find some who will resist even two series. The patient will retain this immunity for at least six years. It is best to give this near the end of the first year, because here it is needed most and creates the least disturbance. If this becomes the general practice diphtheria will soon be a rare disease.

The Dick test, which is very similar in principle to the Schick test, is an important means for the selection of susceptible individuals to scarlet fever. It consists of giving 1/10 cc. of scarlatinal streptococcal toxin intradermally, with the control on the other arm, as in the Schick test for diphtheria. This preparation is put up already mixed by the leading drug houses. The test can be interpreted in from 12 to 36 hours, and a positive reaction is indicated by an area of redness around the sight of the injection, and a negative re-

action by there being no evidence of any inflammation, the skin remaining pale.

We will first take up persons who are exposed to scarlet fever, where the danger is imminent. These cases should first receive the Dick test as it can be interpreted in 12 hours. In the event the Dick test is positive the patient should receive 10 cc. of the scarlatinal antitoxin serum. This gives what is known as a passive immunity, lasting only a few months but is produced immediately.

In cases that have a positive Dick test where the danger is not imminent, and exposure not immediate, then the active immunization method is advocated and advised. This consists of four doses of antistreptococcal toxin given subcutaneously at intervals of from 7 to 10 days. 1 cc. of the preparation is given for each injection, but the strength of the solution increases with each dose. The first dose consisting of 250 skin test doses, the second 500 skin test doses, the third 1000 skin test doses, and the fourth 2000. The amount doubling with each dose. The individual is slower in acquiring this immunity, usually requiring several months; however, it seems to be permanent.

Typhoid vaccination is also very familiar and statistics show that while not absolutely infallible, it is nearly so. Locations where, previous to its advent, typhoid fever was so prevalent that one's life was constantly in danger from it, have been rendered practically free of this disease. Its administration is very simple; the three increasing doses at weekly intervals of the dead typhoid organisms produce an active immunity in the individual's body, lastinfi at least two years and as long as seven.

Besides these routine measures, of course, any injury where there is any possibility of tetanus developing, should receive the prophylactic dose of 1500 units of antitetanic serum. Realizing the danger of an anaphylactic reaction, should the patient have had serum at any previous date; this should be inquired into, and should the case give a history of having received serum at any time in the last few years, you should proceed with great caution, due to the fact that a previous dose of serum makes one especially susceptible to anaphylaxis. In cases with this history, it is always best to inject only a few drops and wait to see if any alarming symptoms develop. If nothing occurs within 10 to 20 minutes, it is safe to give the balance of the dose.

The last of our means is administration of the Pasteur treatment, in the event a patient is bitten by an animal suspected of having rabies. In this connection let me point out the advisability of shutting the animal up and observing it, rather than killing it, and having its brain examined for the characteristic negri bodies. There is always chance for laboratory error in this case, where, if the animal is confined and watched, there is no chance for error. If he has rabies he will die in a week; they all will. Where, if he is living and well at the end of a week, you may rest assured that he is not mad. A week allows ample time for the commencement of the treatment, which any doctor can give. It consists of 16 daily doses as put up by the various drug houses, or the 21 daily doses of the preparation which is furnished free of charge by the state board of health. The simplicity of both the test and the treatment for rabies should encourage every doctor to handle his own case and not pass the buck by sending his patients off for someone else to treat.

While this is elementary and thoroughly familiar to every man present, I am only mentioning these facts to refresh your memory on these valuable means for preventing what has heretofore been regarded as very serious and very dangerous diseases. A more universal adoption of these remedies would result in great benefit to the people of every community.

DISCUSSION.

Dr. John Darrington (Yazoo City): It gives me pleasure to say a word in discussion of this paper by a new essayist, this being his first paper. I remember distinctly that 32 years ago I read my first paper before this Association, and I am delighted to say that I think he has made quite an improvement over the one I read. Thirty-two years is a good long time, and I hope that 32 years from now he will still be in this society.

As the essayist said, this is elementary; he is simply refreshing your memories in regard to these universally accepted methods. Thirty-two years ago smallpox was the only thing mentioned in my paper. Since then we have remedies to prevent diphtheria, typhoid, scarlet fever, etc., and the point I wish to make is that these remedies are available. How many men in the practice of medicine in Mississippi today, going into the various homes will say to the mother or father, "Have you had these remedies administered?" Every man who makes it a rule to say to the mother: Have you had this child vaccinated against smallpox? or, Have you had typhoid serum administered? or, Have you had toxin-antitoxin given? please hold up your hands. I see several. These children do not get the benefit from this knowledge unless we see to it that they do. So the point I want to make is that now that we have these valuable remedies and can save these children, it is our duty to impress upon the parents the necessity of having these things done.

Dr. J. E. Green (Richton): I just want to add a word to what the doctors have said—it is no use to have a good meal unless you eat it; you will starve to death if you just look at it. We have these remedies, but we are neglecting our own families. I don't suppose half the doctors have their own children inoculated against typhoid fever and certainly not against diphtheria and scarlet fever. Let us begin at home.

Dr. G. S. Bryan (Amory): Just a word along this line. I filled in a little gap as county health officer and I took occasion to write articles for my county papers. I insisted in these articles that for every child who contracted diphtheria in that county, as well as others, that some doctor—the family physician—could be held accountable, unless he had advised, personally and directly, the administration of toxin-antitoxin. I went further and said that whenever a child in this county or any other dies of diphtheria and the doctor has done his duty, then the responsibility for that death rests upon the father and mother or the guardian of that child. I believe it had an effect because diphtheria is almost a thing of the past in Monroe County, Mississippi.

Dr. R. M. Adams (Ripley): These scientific papers are very instructive and uplifting to me, and they are immensely uplifting when we hear them from these young men. It means the dawn of a new era in preventive medicine, which is certainly the greatest field for service to humanity. I rejoice in the strength of the young scientific men, in their aggressiveness, fighting their way to the front and blessing humanity with their service. I bespeak splendid achievements for this young man who has given us this splendid paper.

I was very much impressed with Doctor Underwood's discussion yesterday, and a new field opened up before me. I thought of the wonderful work that could be done in Mississippi if our splendid doctors could get the vision and join with the agencies that are trying to drive out the forces that shackle the childhood of this State. We should bow our heads in disgrace until we are able to lift our eyes and look upon a field that is ripe for the harvest and say that these things shall not be. The fact that 89 children choked to death last year from diphtheria, a disease that is absolutely preventable; that approximately 1500 insane children were tortured with this horrible disease—I can see nothing more tragic than that a child should choke to death of diphtheria, and yet 89 did so last year in Mississippi. All this data the doctor gave us emphasizes the fact that only about one in thirty of the children in Mississippi have been immunized against this disease. We are tolerating this horrible disease, and the children are not only tortured with the disease but with the treatment. What a great field for service is preventive medicine. Yet so many of the doctors are actually walking by on the other side, ignoring the call of those who say, "Come over and help us." We are interested in the moral side of the proposition, we are interested in many programs of church and state. Let us try to enlist people in this great cause of saving the children of Mississippi from this dread disease that threatens them today.

Dr. W. B. Harrison (Poplarville): The basic idea that I have in mind has already been expressed here this morning.

It has now been 130 years since Jenner performed his memorable experiment on the boy, James Phipps, demonstrating the fact that smallpox may be prevented by vaccination. A century later it was shown that typhoid fever may be prevented by innoculation. Today, we still have both smallpox and typhoid fever. I am wonder-

ing if, a century from now, we will still have diphtheria and scarlet fever. Whether we do or not depends upon the profession in this and every other state.

I have done quite a bit of diphtheria work. Quite frequently I am asked if there be an epidemic of the disease that I am trying to combat. Of course not. If there were, I would not employ this method of fighting it. It is necessary that we impress people with the fact that in giving toxin-antitoxin, we are looking at least three months ahead.

Dr. W. H. Scudder, (Mayersville): I just wanted to say a word about the relative value of protection from smallpox by vaccination as compared to protection given by a former case of genuine smallpox.

I was health officer of Issaquena County for 25 years, and saw hundreds of cases of smallpox of all types, but extremely rarely, if ever, did I see a case of so-called varioloid—the patient having been protected by a former vaccination. But I did see a severe case of smallpox develop in a man already thickly pitted from a former genuine smallpox of two years before. So, in my experience, vaccination protects equally as well as a former case of genuine smallpox, and furthermore it protects for life.

Dr. Gilruth Darrington (closing): I have nothing further to add, but I want to thank the doctors for their valuable discussion. I think it is the personal duty of the doctor to insist upon this immunization and not let someone else do it.

PAIN IN THE RIGHT ILIAC REGION.*

R. B. YATES, M. D.,

GREENWOOD, MISS.

This paper is not intended to bring out anything new, but to brush our memory on some of the pitfalls into which we are liable to fall when confronted with a patient with the symptoms of right iliac pain predominating.

For convenience, I will divide into three classes the conditions causing right iliac pain:

First—Disease common to both sex, namely: appendicitis, ureteral stones, kidney stones, ureteral kinks, obstruction from clots of blood or lumps of pus, intusception, diverticulitis, intestinal obstruction, intestinal parasites, duodenal and gastric ulcers, gall bladder disease, hepatitis, liver abscess, mesenteric embolus, lobar pneumonia, diaphragmatic pleurisy, and the hernias, femoral and inguinal.

Second—Disease common to the male, namely: all of the first plus the following: the inguinal hernias, both oblique and direct, inflammatory obstruction of the vas deferens, disease of the right epididymus and disease of the testicle.

Third—Disease common to the female, namely: all of the first plus the following: salpingitis, pyosalpinx, tubal pregnancy or extra-uterine pregnancy.

It is impossible to prepare a paper with a differential diagnosis on all the conditions mentioned, but it is my aim to confine myself to the conditions that confuse the surgeon most. The above conditions do not all have right iliac pain as a predominant symptom, but merely have a referred pain to this area. Therefore, I shall come down to the three conditions with identical symptoms at times, viz: appendicitis, right kidney and ureteral disease, inflammatory disease of the Fallopian tube. Here we have three dangerous diseases, the symptoms of which may be practically the same, viz: pain in the right iliac region, nausea, rigidity, rise of temperature, increased leukocytes, and we may have a paralytic ilius in any of these conditions.

At first thought we will possibly all say that ought to be easy enough. In the typical cases this is true, but it is the atypical cases that baffle us. How many times have we opened an abdomen for an acute appendicitis and find less pathology than expected in the appendix, if not indeed a perfectly normal one, and remark that it must be semi-acute, chronic, or some other makeshift expression, when in our heart we are half sure we are mistaken in our diagnosis.

*Read before the Mississippi State Medical Association, Jackson, May 11-13, 1926.

Our patient goes about a week relieved, when suddenly they have another attack and we know it cannot be appendicitis. We watch the urine closely and find pus (clumped pus), a plug of which had caused all the trouble. Now this is a justifiable error, if indeed errors are ever justifiable, because I am supposing that none of us would operate without previously having a very painstaking examination of urine and blood. However, the urinalysis may be negative as a result of obstruction of the ureter on the right side. The blood might present the same picture, then there is only the pain left to help differentiate the two diseases, which I confess I have failed to do.

True enough, we might wait a short time and the next urine would contain pus in abundance, but how many times have we waited a short time to clear our minds and find a ruptured appendix, when if we had operated early we could have closed without drainage and saved our patient a long stay in the hospital, or maybe a funeral.

In the final analysis we must admit that these doubtful early cases should be cystoscoped and urine taken from each kidney by catheterization. The catheter will push the plug out of the way and the urine will be full of pus. The argument enters here that if the case is an appendicitis, the punishment is very great. True enough, but if it is not appendicitis the case does not need a laparotomy. Of these two procedures, the cystoscopic is the lesser. And, too, I have seen cases that were operated for appendicitis and later have the X-ray reveal a stone in the pelvis of the kidney. So a pyelogram at the time of the cystoscopic examination might keep us out of error here, and only consume a moment of time.

Now we come to the next condition, viz: the differentiation between right salpingitis and appendicitis. Here is the condition in which we are helpless, except for the fact that appendicitis is more prevalent in the male than female, and salpingitis is worse around the menstrual period. Still, to differentiate between the conditions in the female is a problem to tax our wits. We are confronted with a blood picture very similar and frequently the same. The urinalysis throws no light on the subject, in fact we are left to use our sense of inspection and palpation and consideration of the habits of the patient.

We might say we will operate to clear up the diagnosis, but when we consider the dangers of early operation in salpingitis, and the dangers of procrastination and late operation in appendicitis and the contraindication to operation should the condition be one of kidney or ureteral disease, it behooves us to exhaust our aids in an effort to make an early diagnosis, for many reasons.

For instance, the laity believes, or at least a lot of them believe, that a median incision in a lady in all probability means an infection of the tube or ovary. Therefore, we hate to make a median incision in a young girl whom we believe has walked in the straight and narrow path, yet, if we have the shadow of doubt about our diagnosis, we must go through a median incision. Then, if we have early gonococcus infection of a tube, we would do our patient justice if we find that we have erred in our diagnosis to close her up and wait until the acute symptoms have subsided.

This suggests to my mind two cases in which I made mistakes in diagnosis. You will please pardon me for I am aware it is not customary to report cases in which we make errors. In these cases, however, the undertaker did not bury my mistakes, hence the reports.

Case 1. Miss. Y., family history negative, had several light attacks of pain in the right iliac region with nausea which never lasted long. She never called a doctor until the last attack when she called her physician who thoroughly examined her and from all symptoms diagnosed the case appendicitis. He sent her to me for treatment. She arrived in the afternoon, suffering severe pain in entire abdomen, but worse over McBurney's point, extremely rigid over right side, tem-

perature 100, pulse 100, urinalysis negative, white blood cells 18,000, 88% polys. Diagnosis: acute appendicitis. I operated early that night, finding a normal appendix, but I kidded myself into believing it was slightly inflamed for six days when she suddenly had repetition of all her symptoms as above recited. The urinalysis was negative until the pain subsided, then it was full of pus. I changed my diagnosis, put her on potassium acetate and citrate with instructions to keep this medicine on hand and take it every time she noticed any pain in this side. She made an uneventful recovery, left the hospital and sings my praises for curing her appendicitis.

Case 2. Mr. K., family history negative, age 27, white farmer, had some pain at intervals for past two or three years in right iliac region, but taken suddenly with pain over entire abdomen, worse over McBurney's point, rigidity very marked, nauseated, vomiting everything taken by mouth, urinalysis one plus pus, leukocyte count 15,000, 80% polys, diagnosis: acute surgical abdomen. I operated, going through right muscle appendix, retrocecal and very difficult to get. Had to amputate at the base and dissect it out which was a very tedious task. When it was finally removed, of course being rather long and having been traumatized considerable, I kidded myself into half believing it was bad enough to account for all his symptoms. However, I felt of his gall bladder and stomach and both appeared normal. He had some infection in the abdominal wound, otherwise he got along fairly well and left the hospital in two weeks. I haven't heard of him praising me. He has been back, however, complaining with the symptoms he suffered prior to the bad attack when he was operated. I made an X-ray picture using the Bucky diaphragm, and found in the right kidney pelvis a shadow which I am inclined to believe to be a stone about the size of an almond. He hasn't agreed to let me cystoscope him, nor operate any more. He may agree sometime during an attack of what I now call renal colic.

CONCLUSIONS.

(1) Every case of appendicitis should be diagnosed and operated early.

(2) Doubtful cases should be cystoscoped and pyelogram made which will demonstrate pus plugs, stones, or ureteral kinks.

(3) When an acute surgical abdomen is opened and found to be an acute tubal infection, it should be closed without interference and wait for it to clear up, which they will frequently do, or become chronic walled-off abscesses at which time they can be removed without so much danger to the patient.

DISCUSSION.

Dr. C. R. Berry (Tupelo): Dr. Yates has discussed a subject that brings up a great many problems that we are more or less familiar with —pain in the right iliac region—yet there are many problems in connection with this subject that are difficult to solve. He mentioned three of them, and I want to say something about each of these.

First, pyelitis and how to differentiate it from appendicitis. The essayist suggested that we use a cystoscope. I thoroughly agree with him on this point, provided we know how enthusiastic and efficient the doctor is in using the cystoscope. The sheet anchor of differential diagnosis is careful history taking in connection with the physical findings. A helpful point is to find out the origin of the pain. Did it originate all over the abdomen and finally settle in the iliac region, or did it begin there? Remember, that as a rule the fever is higher in pyelitis than in appendicitis, and the pain is usually not as severe. After these things have been thoroughly considered I think it is all right to make a cystoscopic examination, if the general examination, history and physical findings point to the kidney rather than to the appendix.

Personally, I have had more trouble with the next problem—differentiating salpingitis from appendicitis. I admit that in these cases it is often very hard to decide whether it is best to operate or not. If it is acute salpingitis we do not want to operate; if it is acute appendicitis as a rule it is best to operate. Here, too, getting a careful history will often help wonderfully in differentiating these two conditions. In appendicitis the symptom of nausea is more prominent than in tube trouble. Then in appendicitis I believe we get more of a history of paroxysms that pass off in a short time—there will be trouble for a few hours and then it will apparently clear up and appear again in a few days, weeks or months. In salpingitis the tendency toward paroxysms is not so general as in appendicitis.

In regard to cases where the appendix is apparently normal, I believe that on a close examination we may find a large per cent. of them are pathological. Often we see appendices that look normal when first seen in the abdomen, but even such specimens may contain some pus in the distal end. A great many appendices that look normal macroscopically; under the microscope are not

normal—they may be badly infected, and we get good results by removing them.

Dr. A. G. Payne (Greenville): There are two or three points that I want to bring out that Dr. Yates mentioned, but did not emphasize as much as he should.

One is in regard to the incision. In a great many instances it has been my displeasure to see, in my own work and in others, that I could not distinguish between an appendicitis and a gall bladder condition, or a rupture of a duodenal or pyloric ulcer, where a McBurney incision was made. According to my idea the McBurney incision is overworked. For instance, if we have a rupture of the duodenum or the pyloric end of the stomach, if we have made a McBurney incision that patient is handicapped as well as the surgeon. I have recently seen some disastrous results along that line.

Another point is that in women, where it cannot be accurately determined whether the trouble is in the uterine appendages or the appendix, the midline incision is far preferable. I have seen some instances where the surgeon's results would have been much better and ultimately the patient would have benefited more if a median incision had been made. If there is one dogma I would adhere to it is that in lower abdominal trouble in women we make a median incision with the exception of acute fulminating appendicitis.

Dr. Robert H. Foster (Laurel): In our hospital at Laurel we have a ward of about twenty beds for colored women. As a rule about fifteen of the beds are occupied by cases of pus tubes, and the others with fibroids. My experience has been that if there is any doubt as to whether it is appendicitis or pus tubes, if the woman is colored, it is pus tubes. We very seldom have a negro woman with straight-out, frank appendicitis. But our experience is that they do not come as soon as they have a pain in the side; we usually have a history of repeated and prolonged attacks.

Another thing, the doctor said something about opening, finding acute pus tubes, then closing and taking them out later. If you make a mistake and find pus tubes, take them out and you will have good results.

Dr. L. S. Lippincott (Vicksburg): There is one reason that has not been mentioned why it is more difficult to tell the difference between pus tubes and appendicitis, and that is that they are usually both involved. We have been examining all of our specimens microscopically, and practically never do we find an appendix that has been taken out at the same time as pus tubes that is not involved. It is different from the inflammation in appendicitis without tube inflammation. Appendicitis by itself usually starts from the lumen, but with pus tube infection it starts from the surface.

Dr. J. E. Green (Richton): How about pain on the right side where you cannot operate? I do not know whether you have this experience or not, but out in the country the mother and the grandmother will treat the patient for this acute pain, and they use heat, and they use cold. I wish the essayist would tell us if that is all right. I think in these cases if we could keep everything out of the stomach, keep the patient absolutely quiet, with an ice bag on for twelve hours, the diagnosis would not be so difficult.

Dr. R. B. Yates (closing): It was not my purpose to try to tell any of you gentlemen anything about surgery in the right iliac region; but it appeared to me it would be a good thing to bring out discussion along this line.

There are points that are baffling to all of us at times, but I think we get into more trouble in the right iliac region than any other part of our anatomy. Someone spoke of the appendix looking normal macroscopically, but microscopically showing infection. Normally the intestinal tract contains a lot of bacteria, and I believe the appendix is the same way.

One of the gentlemen emphasized the fact that you are safe in taking out pus tubes any time. I agree with that, and I believe the big majority of these salpingitis cases will clear up if you let them alone.

I agree with Dr. Payne that in women it is the safe thing to do to make a median incision.

As to whether to use heat or cold, I believe cold is better. I believe local applications are good, if for no other reason than to make the patient believe we are doing something until our diagnosis is cleared up.

THE PRE-SCHOOL CHILD.*

FELIX J. UNDERWOOD, M. D.,
JACKSON, MISS.

There is no unanimous definition of the term, "pre-school child." While it is usually used as referring to the child of the age

---

*Read before the Mississippi State Medical Association, Jackson, May 11-13, 1926.

period between infancy and the time of entering school, it is more frequently construed as beginning with either the first or second year of life and ending with the sixth or seventh year. More recently the term has been used by students of child development as inclusive of the entire period from birth to the eruption of the six year molars. With the tendency to establish school life in earlier years, that is, the kindergarten and nursery school, the meaning of the term is becoming even more complicated and indefinite. From the standpoint of child hygiene activities, however, we usually mean the period from the second to the end of the sixth year.

The growth and development of the child is a continuous process. In the same way that many of the health problems of the school child have their origin in the pre-school years, so, many of the problems of the pre-school child or as he is often called, the toddler or run-about, date back to infancy or even pre-natal life. While from an administrative point it may be necessary to consider periods of development, the fact that these are arbitrary and have no existence in the true sense of the word, in an anatomical or physiological growth, must be kept clearly in mind.

The pre-school period has frequently been termed the neglected period of childhood, in the sense that less child hygiene work has been done for children of this age than for infancy and school age—further, we know less of the normal growth and development at this period, which is, of course, essential for a comparative knowledge of the abnormal. The difficulties of reaching this age group are well known. The methods of solving the problems it presents must still be considered in an experimental stage.

Given the necessary requirements, the pre-school child automatically grows and thrives. The pre-school child needs sunshine, pure air at proper temperature day and night, pure food properly balanced and served at regular hours, plenty of pure water inside and out, and twelve hours of sleep out of the twenty-four—ten at night and two in the day. Proper clothing adopted to climate and seasons should be worn. Special care of the eyes, ears, nose, throat, teeth, skin, scalp, hair, nails, hands, and feet should be given. The child should be trained relative to food and other health habits; also have a daily bowel movement at a regular hour. A certain amount of freedom and exercise and supervised play is important.

The diet of the child should be judiciously chosen and he should be taught thorough and slow mastication of meals at regular hours. All food should be pure. If the child is undernourished, a glass of milk, or crackers, or fruit, may be given between meals. Milk is an essential, but it must be fresh, clean, and sweet. If the child objects to plain sweet milk, it may be given in various forms, such as: cocoa, ice cream, white sauce, milk gravy, custards, cream soups, milk toast, scalloped vegetables, on cereals, and buttermilk with cream added. Eggs must be fresh, and lettuce and other leafy vegetables, crisp and thoroughly rinsed in pure water. Milk and green vegetables make bone, muscles, and teeth. Meat and eggs are great muscle builders. Bread, cake, cereals, and desserts give energy for work and play. Cooked cereals are better than ready to eat ones. All food should be simply prepared, without seasoning except for salt. On very hot days, less food is necessary.

Temporary loss of appetite is usually caused by over-feeding. Over-feeding, and faulty-feeding, help to establish wrong food habits, cause indigestion and attendant ills. A capricious appetite is a matter of faulty training in food habits. Constipation may be overcome by a balanced diet and regular food habits.

Children between the second and third year may be given minced white meat and scraped beef daily. Children over three

years of age may have pure candy several times a week, after the noon meal. After the third year, they may be given tender meat cut into small pieces, for desserts they may be given stewed fruits, simple puddings, jellies, custards, honey, plain sponge cake, plain ice cream, or a piece of pure sugar or molasses hard candy. No sweets should be given, except after meals. Soda drinks or coco cola, tea, coffee, pies, doughnuts, pastry, and fried foods, or greasy gravies, should be prohibited.

A child has the right to be protected against contagious diseases and vaccinated against diphtheria, typhoid fever, smallpox, and scarlet fever. He should be weighed and measured regularly and a record not only kept, but compared to the average weight and height. An examination by a dentist every six months and by a physician every year is a wise investment. Physical defects found should be corrected and special care should be given to the underprivileged and to the handicapped child.

"A child should be thought of as something more than arms and legs which are always tearing clothing and getting him into trouble, or eyes and ears which are seeing and listening when it is inconvenient for adults to have them, and a stomach and internal organs which get out of order. A child has a mental life far more delicate and complicated than his physical body; far more difficult to keep in order and much more easily put out of adjustment. A child lives a real mental life, full of hopes, ambitions, doubts, misgivings, joys, sorrows, and striving that are gratified or thwarted, much the same at three years as they may be at thirty." So says Dr. Thom, a child specialist, who has charge of a habit clinic for children of this age.

Those who are interested in children and have studied their growth, know that the home is a work-shop in which the characters and personalites of individuals are molded. A child is sensitive to home atmosphere, therefore, a harmonious home life aids in his growth. He should be allowed freedom of expression instead of suppression and repression. He should be given the initiate, yet taught obedience. He should be educated by example in unselfish service to others. It should be steadily borne in mind and publicly broadcast that the physical, mental, and moral health, and the happiness and efficiency of the adult are largely the result of habits acquired during the pre-school age.

In discussing the health examination of children of this period, it is an obvious necessity to consider what we mean by this term, its purpose and its scope. First of all, it means a physical examination to discover physical defects or diseases which are prejudicial to the health of the child. As a corollary to this, means and facilities must be provided to correct the defects found, otherwise, the mere physical examination is a meaningless gesture. It must also include an examination, from time to time, for the purpose of checking up growth and development in order to ascertain if these are taking place in a normal manner. This health examination should extend beyond the physical side and include the question of mental development in its broadest aspects, for we realize today that the mental growth which takes place during these years is of tremendous import. Furthermore, the habits and behavior of the pre-school child are intimately related to and connected with the physical problems.

The physical examination of the child should stress the important and minimize the unimportant. We have passed far beyond the point where statistical purposes alone can be the excuse for much of the unnecessary data collected, recorded, and filed away to be forever forgotten. Statistics of the physical defects of the pre-school child are quite in accord; here and there appear variations which are due to social and racial differences in the type of material examined, as well as to the personal equation of the examiner's record.

Among pre-school children, malnutrition exists in from twenty to twenty-five per cent. Postural defects, related to muscular and skeletal systems, occur in from forty to fifty per cent. Dental defects are the most common, sixty to seventy per cent of caries, in a greater or lesser degree, being present. Nose and throat troubles rank high, totaling over forty to fifty per cent. For visual and eye defects, quite divergent figures have been recorded. Heart, lung and nervous diseases are relatively low. The importance of these figures is not simply that they indicate that a large part of our pre-school population, estimated at about ten million, is physically defective or abnormal, but that these children reach school age handicapped. These physical defects which should have been prevented or corrected are in large part responsible for the fact that about twenty-five per cent fail to be promoted at the end of their first school year.

Nutrition is recognized as an index to the general health and physical condition of the child. Malnutrition is not a disease, but its presence is important as an indication that something is wrong in the child's physical condition or environment, requiring a thorough search for the factors at fault| Malnutrition cannot be based on the height, weight ratio, alone, but must take into consideration development of the muscular and skeletal systems and other factors. Existing tables of the height, weight ratio, are satisfactory for practical purposes.

Closely associated with the nutritional condition is the question of faulty posture. It is not infrequently the result of malnutrition in early infancy or rachitis in later infancy. In this respect, many of the postural defects should have been prevented earlier, but a great deal in the way of exercise and training can be done at this period to correct the defects and prevent them from increasing and being carried over into the school years.

The examination of the nose and throat is most important. Some fifty per cent of pre-school children show diseased tonsils or adenoid hypertrophy or enlarged cervical lymph nodes. There is usually confusion in classifying these things together. This is a most unfortunate tendency and it is closely related to the conception that diseased tonsils and adenoids are one and the same thing. Tonsils may be infected and be a cause of chronic toxemia in young children, but this is uncommon. During this age tonsils are rarely so large as to cause obstruction. Adenoids, either chronically or acutely enlarged, on the contrary, often obstruct nasal respiration, leading to infection of the adenoid tissue and nasal openings, to the mouth, and thus lead to mouth breathing. Adenoids cause trouble and need removal, perhaps in ten cases to one in which the removal of tonsils is required, at this age period.

To what extent defective first teeth are a cause of ill health and are related to nutrition, is hard to say. Proper oral hygiene, is, of course, essential and the prevention of bad decay of the teeth by dental means is important. Food to build teeth during the pre-natal period and infancy is of paramount importance.

It is exceedingly difficult to determine eye defects at the early pre-school period; this examination can only be made by an experienced eye specialist with patience and skill. Careful study shows that about eighty-five per cent of children of this age have good vision. Hearing is also difficult to test in the routine examination.

Organic heart disease is uncommon, and, usually, congenital. Most heart mumurs heard at this age are functional. Most children of this age with pulmonary diseases are already under the care of a physician, as a result of some definite illness.

It is during this age that communicable diseases are greatest in incidence and mortality. It is believed, also, that children of

this age are specially susceptible to tuberculosis. Diphtheria, scarlet fever, typhoid fever, and smallpox are diseases against which we have definite methods of prevention. Vaccination against smallpox should be carried out in infancy; toxin anti-toxin injections against diphtheria should be given in the latter part of the first year. To wait until the school age to immunize against diphtheria, is to leave the child unprotected during the most susceptible period of its life. Inoculation against typhoid may be given before entrance to school.

Watching and recording the development of the child during the pre-school years is as important as the physical examination for the detection of defects. The actual and percentage growth is fairly constant from year to year and relatively small compared to the first two years of life. The annual average gain is, approximately, four pounds, and the increase in height two and one-half inches.

Our knowledge of the mental development and psychology of the pre-school child is incomplete. It is only recently that this side of the child's development has been made the subject of intensive experimental study.

To outline by periods the mental growths and the development of personality traits, and to discuss the emotional conflicts of the pre-school child, are impossibilities within the limits of this paper. That they should be a part of the health examination, we are satisfied; but, just how such examinations are to be carried out and made practical for general application is a problem which must be worked out. Here, again, experience will help to separate the essentials from the non-essentials.

For a group of pre-school children about to enter school, a child health conference may be held. We prefer to think of a child health conference as a demonstration held by physicians, dentists, parents, and others interested, to discover the physical condition of the children. We believe that this should be non-competitive; that no score card should be used; and that it should be a conference or demonstration and not a contest or clinic. It is not intended for sick children, but for the great number of children who, though apparently well, are rarely free from physical defects. It includes a careful physical examination of the child, the purpose being to ascertain the development as compared to the recognized normal standard, to instruct the parents relative to health habits in order to prevent defects and to discover defects at an early age, when they may be easily remedied by proper hygiene or medical care. If defects are found the parents are advised to take the child to the family physician or to a specialist. Examination blanks are furnished by the Bureau Child Hygiene and Public Health Nursing and the parent is, also, given a written statement of the child's condition. Those children having no physical defects are awarded a health button from the State Board of Health. Primarily, the purpose of this conference is for the sake of the child, but a most vital factor is its educational value. It is a practical demonstration to the community of the value of a periodical physical examination. It stresses personal hygiene and other preventive measures, in order that infants and pre-school children may be kept well, and ready to enter school without defects.

DISCUSSION.

Dr. N. C. Womack (Jackson): The doctor has brought to us a subject that in its relation to the economic life of the community, for the present and for the future, to my mind, stands in the first place of importance. The sociologists, the psychologists, the specialists in children's diseases, and general practitioners are meeting in this theatre of pre-school life and studying the infant for the purpose of prolonging life, and increasing the chances for good health in later life.

The first great thing in the care of a normal child is its diet. We doctors see a great deal of third, and fourth degree rickets, of low hemoglobin, low Poly. count, undernourishment, no-

dules on ribs, flat chest, etc. But diet is the important thing. The doctor has covered that field, but I want to make one point. A great many doctors are putting babies when they are about ten days old, not as medicine, on codliver oil and orange juice, small doses, and keeping them on that for the first year or two years. That with a balanced diet will take care of a child from the standpoint of diet.

See that the child is immunized against diphtheria early—there is no reaction and no danger. When it comes to scarlet fever, the baby should have a Dick test. Immunize the children against typhoid fever and smallpox. When the baby needs to have tonsils and adenoids out, look after sinus infection. This is important in the rearing of children,—getting rid of infections. This question comes up in Dr. Ramsay's practice. Over 800 children in Georgia were examined and a large percentage were found with intracranial hemorrhage. These children that are going around with spastic paralysis, and are permanently crippled could be relieved often by a spinal puncture. Tuberculosis is a disease of early life. Tuberculosis in later life often comes from infection before the fifth year, and it should be looked into then and treated. Eight and a third per cent. of children will show positive Wassermann and of course should have proper treatment. Remove adenoids and tonsils when necessary.

Dr. Harvey F. Garrison (Jackson): This subject is probably the most important that could be brought before any medical meeting; the subject of the proper regimen for the pre-school child. As the fraternal delegate of the State Medical Association this year, it was my privilege a few weeks ago to read a paper before the State Dental Association on the subject of Mouth Hygiene and in that paper I stressed the importance of the things the speaker has gone over today. Dr. Underwood has so thoroughly covered the subject that there is nothing left for one to say except to agree with him.

I might go a little further back and impress, a little more than he did, the importance of pre-natal feeding. One of the most important things in any child's life is the proper diet for the mother before the child comes. I do not think the doctors could do a better thing than to impress this fact upon expectant mothers. You know we used to eat too much biscuits and molasses, white bread, etc., and not enough green vegetables. Next in importance to pre-natal feeding is the feeding of the infant itself. The most essential thing after a child is born is that it be breast-fed. We have found a disposition on the part of some doctors to advise mothers to wean their babies just for some little upset or irregularity that would be easily corrected if the proper attention were given to the condition by a trained pediatrician.

A week ago I saw a baby that had a little bowel trouble for a few days, and the doctor who was in charge of the case advised the mother to wean the baby and put it on condensed milk. Usually these things can be corrected and the mother can nurse the baby if the condition receives the proper attention by some one who is trained in handling these problems, so we should impress and insist on the importance of the mother nursing her baby.

If the baby cannot be nursed, the next best thing is the proper modification of cow's milk. Get away from condensed milk. Cow's milk properly modified contains the essential elements that go to make the child's bones and teeth. Most of the deciduous teeth are made before the child is born, hence the great necessity for the proper pre-natal diet. The next thing in importance is feeding the child after the infant period, and then you should go to whole grain feeding, green vegetables, and give the child variety. I agree that codliver oil is important, especially in cases where we see signs of rickets. It is not necessary to wait until rickets has already developed to give the codliver oil. It is very necessary to stress the things Dr. Underwood has mentioned—careful physical examination of the child by some competent person. A dental examination twice a year and a physical examination once a year, and then the correction, if possible, of all the defects discovered by such examinations.

In regard to removing tonsils and adenoids in children, we know we have a great wave going over the country just now to take out all the tonsils and adenoids in children. I do not think they all ought to come out, but certainly all that are infected should come out and many of them are infected. This morning I assisted in the removal of adenoids from a child who had the tonsils and adenoids taken out some time ago, but the adenoids had recurred and you will find this happens rather frequently even though they are removed by some of our very best operators.

To summarize we should say the solution to this subject lies in, first—proper pre-natal care and feeding; second—where possible, we would insist that every mother nurse her baby; third—if for any reason the baby is weaned it should be placed under the care and feeding directions of a well trained pediatrician who will insist on feeding cow's milk with the addition of other foods at the proper age; fourth—eliminate the pernicious habit of eating candies and sweets or any other food between meals. Feed whole grain

foods, green vegetables, an abundance of fruits, pure whole raw milk to the run-about child, and correct the dental and physical defects.

Dr. H. H. Ramsay (Ellisville): I like Dr. Underwood's paper. It is a splendid presentation for the reason that it is well balanced from the mental and physical standpoint. The mental development of the child is seldom taken into consideration. Very few people recognize the fact that the child is mentally defective until it is old enough to become active and the parent or physician begin to notice that there is some lack of activity on the part of the child. Mental conditions are more or less masked for the simple reason that we cannot see the mind. A ten-year-old boy with one leg off can start down the streets of Jackson and by holding out his cap can gather as much coin in a day as some of us doctors. But if some ten-year-old boy with a five-year-old mind were to start down the streets of Jackson, people would kick him out of the way, when as a matter of fact he is a worse cripple than the boy with only one leg.

The average doctor, if he is a close observer, should make a diagnosis of mental deficiency in a baby rather early in life. The outstanding things that present themselves are, late dentition—you can always suspect mental deficiency if a child is late in cutting teeth. If it is late in noticing; if a child continues after two or three years to soil itself; if its movements are not proper—all these things should excite suspicion on the part of the parent as well as the physician as to the child's mental efficiency. Then when mental deficiency is diagnosed early in the life of the child, the shock that comes to the parents can be overcome and its training begun early. When it is recognized when the child is older it is a much more difficult problem. We should recognize these conditions early in life.

Dr. C. M. Murry (Ripley): Such an excellent paper taken in conjunction with the other papers at this session, and the discussions that we have had, simply accentuate the tendency of this great profession to advance toward that hopeful time when medicine shall be resolved mainly into two parts—prevention and surgery. When we look back to the beginnings of the Board of Health in this State—the main part of their work prior to 1900 was the appointing of health officers in the counties, and to examine those boys who expected to obtain licenses to practice medicine, giving many medicines for diseases of which they knew nothing—I say when we go back to 1898 and see the first forward step in this State, we have cause to rejoice. Beginning with the prevention of yellow fever, we have made rapid progress, but we still need to continue the work along educational lines, and arouse public sentiment so it will not be necessary to come down here and make a fight to get an appropriation to continue the great work of public health.

Dr. E. L. Wilkins (Clarksdale): Dr. Underwood has told you that 40 per cent. of the pre-school children suffer from some diseased condition of the nose and throat, and when we add the ear, and the eye, I think will run it over 50 per cent. of the pre-school age children. We find lots of these little fellows who need this attention, but they are told by their family physician, "Well, he has a little trouble with his tonsils and adenoids, but they ought not to be taken out until he is five years old, and perhaps by that time he will outgrow it." By the time the child reaches the age of five it will have received a tremendous amount of injury to the bony formation of its face and the under part of the brain cavity. There will not be the proper formation of the bones of the face if the child has disease of the nose, throat and ears, particularly tonsils and adenoids. We cannot wait for that age. So many people come to me now with a child whose throat is almost closed and it is not breathing through its nose—and they have been told the child is too young to have its tonsils and adenoids removed. It is up to the family physician to educate these parents.

I think any man in general practice who is doing any work in treating young children is inexcusable if he does not have in his armamentarium an ear speculum, a tongue depressor, a nose speculum, and a head mirror. With these and some kind of electric light he can make a thorough examination of the throat, nose and ear. Every man who is doing work among children should have these.

As to the routine removal of adenoids, I differ a little bit from Dr. Underwood on that. He said ten to one need adenoids removed when they do not need the tonsils removed. I believe it is almost the reverse that not more than two in ten will give good results if you remove the adenoids alone. That is my experience. I do not mean to sacrifice normal tonsils; but adenoids will recur in 50 to 75 per cent. more cases when tonsils are not removed than where they are.

The ear was not discussed much. Too often the doctor lets the child go on, giving it some relief for the ear, when the ear drum should be incised. It is not much to do a paracentesis of the drum membrane, but when the drum is bulging and angry and red, it should be incised

with a long curved or angular incision and not wait for it to rupture. More than 50 per cent. of cases of long-standing otitis media are the result of spontaneous rupture of drum and not from those where the drum has been opened with a clean surgical wound.

Dr. Felix J. Underwood (closing): I certainly appreciate the liberal discussion of my paper.

With reference to the removal of tonsils and adenoids, I know we are getting away from the reckless slaughter of tonsils and becoming conservative. I fail to see why you should remove healthy tonsils to prevent the recurrence of adenoids. The child might very much rather have an experienced man take out the adenoids the second time than to sacrifice the tonsils for that purpose.

I will not discuss this further, but I want to mention the Children's Health Camp. You doctors are familiar with the camp we conducted last year, where we had twenty-five children between the ages of seven and twelve under medical supervision of the State Board of Health. Mrs. Robert Phifer, of the State Tuberculuosis Association, has been for years talking and working to the end that we might have a State Health Camp for undernourished children. We joined hands with her and had the camp last summer and will have one this summer. We will take care of fifty children this summer, 25 in July and 25 in August, between the ages of seven and twelve.

The money has come in for twenty children, but we have thirty more to provide for. We are not asking the doctors to interest themselves in raising money for this, but we want you to be on the lookout for children who most need this particular service to be rendered at this camp. Dr. W. S. Leathers, who spent a year in Europe, visited the camp last summer, and in the presence of Dr. Dan J. Williams, his wife and others stated that in his judgment it was one of the best things that had been done by the State for the prevention of tuberculosis in children. In the little State of Denmark where he was visiting only recently, he stated they had twenty such camps fostered by the State.

We want your co-operation, and we want you to be on the lookout for children who will be most benefited by a month's stay at this camp.

SURGERY OF THE SPLEEN.*

H. A. GAMBLE, M. D.,
GREENVILLE, MISS.

The spleen has three definitely known functions. These are the formation of white blood cells, the destruction of red blood cells, and the destruction of detoxicating of bacteria and poisons.

Besides these three there are four other functions which have been hypothetically ascribed to the spleen and to a limited extent from experiment found to be intimately associated with it, viz., the conservation of iron, the formation of cholesterin or bile salts, an internal secretion which supposedly aids digestion, and has a controlling effect upon all the blood forming organs.

It has been only of comparative recent date that the clinician and surgeon have recognized that disorders or malnutrition of the spleen either as a blood-destroying or blood-making organ or overactivity from exercise of its detoxicating function, has been the main factor in the causation of several of the more prominent blood dyscrasia, such as essential purpura hemorrhagica, hemolytic jaundice. Banti's disease and some of the leukemias probably play a not unimportant role in the development of the graver disorders of the blood forming organs.

Clinical results have shown conclusively that in Banti's disease, hemolytic jaundice and chronic purpura hemorrhagica, the operation of splenectomy is both life saving and curative, and that in many of the pernicious dyscrasias of the blood it sometimes cures and often prolongs life.

I wish to take for the basis of my discussion today three cases which have recently come under my observation, each of which was in an unusually advanced stage of the disease entity to which it belonged,

*Read before the Mississippi State Medical Association, Jackson, Miss., May 11-13, 1926.

and in which this operation was clearly a life saving procedure.

The first case of chronic purpura hemorrhagica was admitted to the clinic May 15, 1924, because of intractable nose bleed and was referred to Dr. Montgomery, later coming under my care. The history was as follows: Family history, mother living and healthy, father dead. Patient had had influenza, scarlet fever, measles and mumps. Had previously had adenoids removed. On March 10th had hemorrhage from the kidneys, prior to this had had a fever and cold with pain in chest and back. For five years had had similar attacks of nose bleed with at times attacks of subcutaneous ecchymoses.

Physical examination showed heart and lungs normal. Constant bleeding from the nose. There were also present petechial spots over the body.

During intervals he was apparently well. This last attack with subcutaneous petechiae ecchymoses, bleeding gums and nose bleed had persisted for three months until he was almost exsanguinated. Patient had been transfused four times previous to coming under our care, and was twice transfused here being given 500 cc. of citrated blood at each operation. There was no appreciable checking of the nose bleed as a result of the transfusions, and as Frank in 1916 had reported one case, and Brill and Rosenthal in 1923 reported two cases in which splenectomy had been done for this condition with the happiest of results, it was decided to remove the spleen. Under N.O and ether anesthesia the spleen was removed without any technical difficulty, and by the time the wound was closed all oozing from mucous surfaces had stopped. In fact the effect was so immediate as to be spectacular. The patient made an uneventful recovery and in a recent communication his mother states that "He seems to be in perfect health so far, and has not had any further hemorrhages." The winter after his operation he had "flu" and his nose bled for a few minutes. This past winter it bled some when he had a bad cold. He looks like a different boy, has lots of color in his face, and weighs about 140 pounds."

For a true conception of the blood changes in this disease we are indebted to the earlier observation of Denis and Haymens and later to the more classical work of Frank and of Eppinger. They showed that the most salient feature connected with the blood was the increased destruction of the blood platelets by the spleen, and thus the marked lessening of their number in the circulation. They were the first to note also that the bleeding time in these patients was markedly prolonged and that while the clotting time of the blood was not increased that there was no retraction of the clot as is normally the case. There have been a number of these cases reported in the literature of the past three years and the results have been uniformly successful, so that essential thrombocytopenic purpura hemorrhagica may be classed as one of the blood dyscrasias for which the operation of splenectomy is a definite cure.

The second case, J. M. D., was one of acquired hemolytic jaundice. History was as follows:

Family history—mother and father living and healthy, eight brothers and sisters, all living and in good health. Patient had had pneumonia in 1915 and influenza in 1922. During the past year had had several attacks of colic followed by jaundice. Two weeks prior to admission to clinic had an attack that was particularly severe.

Physical examination showed a mild degree of icterus. Some slight soreness over epigastrium. Anaemia marked. Blood count as follows: Hemoglobin, 35; Erythrocytes, 1,980,000; leukocytes, 6100; anisocytosis plus, 1; small lymphocytes, 30; large mononuclears, 6; polynuclears, 64%; malaria, negative.

On account of the jaundice and attacks of epigastric pain was thought to be suffering from gallstones. Further observation showed that the jaundice was not obstructive but hemolytic in type. On account of the marked anemia the patient was transfused three times with such marked improvement in health in every way that he refused to have his spleen removed. Nine months later he returned in as bad or worse condition than at first. After two preparatory transfusions the spleen was removed without difficulty the patient leaving the operating room in excellent condition. Three hours later symptoms of profound shock were manifested and it became necessary to do an immediate transfusion. His further recovery was without incident and went on to complete restoration to health. A recent report on the patient is to the effect that he died a few weeks ago from an empyema following pneumonia.

Hemolytic icterus is essentially a disease due to overactivity of the spleen in the destruction of an increasingly fragile blood cell, and the throwing on the liver of more pigment than it can utilize or assimilate at

the time. In this particular case when the crisis occurred there would at times develop a hemoglobinuria.

The blood in these cases shows aside from the anaemia an increased fragility of the red blood cells and an increase in the amount of bile pigment in the blood. This is best determined and the differentiation made as to whether the jaundice is obstructive or hemolytic by the use of Ehrlich's diazo reaction. The feces also show the presence of bile pigment.

The third case is one of advanced Banti's disease with some cirrhosis of the liver and marked ascites. There were a number of interesting features in connection with this case. History—age 48. For ten years had suffered from diabetes which during the three years preceding had necessitated a strict dietary regime and the constant use of insulin. In May, 1925, while on a trip became almost exsanguinated from a hemorrhage into the bowels. Two weeks later developed some ascites. For the next few months was seen from time to time in consultation, a diagnosis of cirrhosis of the liver with ascites having been made. His condition oscillated, sometimes better and again losing ground and from time to time having hemorrhages from the stomach and bowels. During the fall he was transfused twice and in November the ascites became very marked necessitating tapping which had to be repeated about every nine days, there being obtained at each seance twelve liters or three gallons of fluid. I again saw him in consultation and advised that a Talma-Robinson operation be done. After two preparatory transfusions on February 20th, 1926, under local and gas anesthesia a left rectus incision was made on account of the possibility of the condition being due to the spleen. The surface of the liver was a little roughened but not sufficiently cirrhotic to account for the clinical features of the case. The spleen was about three times the size of the normal spleen and weighed 402 grams. Capsule thickened and bound by adhesions to the diaphragm and to its bed over the kidney. Spleen was removed, all oozing controlled and the omentum attached to the abdominal wall, after first roughening the wall according to the technique of the Talma-Rabinson operation. For the first forty-eight hours following operation condition was satisfactory. At the end of seventy-two hours there was an almost complete suppression of urine, the C O^2 combining power of the blood was 32, and general condition was bad. He was transfused and under the continued administration of glucose intravenously and insulin which had been started immediately after operation he made a satisfactory operative recovery, and furthermore has continued to improve in every way in his general health. His blood now shows hemoglobin 80, erythrocytes 4,760,00, leukocytes 7700, small lymphocytes 32, large mononuclears 7, polys 60%. Malaria negative. He has gained twenty-five pounds in weight, strength is rapidly returning, and there has not up to the present time been the slightest indication of ascites.

Splenic anaemia is defined by Osler "as a primary disease of the spleen of unknown origin characterized by progressive enlargement, attacks of anaemia, a tendency to hemorrhage, and in some cases a secondary cirrhosis of the liver with jaundice and ascites. That the spleen itself is the seat of the disease, is shown by the fact that complete recovery follows its removal."

As Osler states, its etiology is unknown, and while there are many theories as to its causation, the most plausible one is that primarily there results from infection or a toxemia an enlargement of the spleen, which after it has served its normal function of destroying bacteria or detoxicating poison continues its increased activities, particularly as a hemolytic organ.

Splenic anaemia is a distinct clinical entity, the symptoms of which however are spread over such a prolonged period of time that they must be correlated in order to obtain a concrete clinical picture.

The presence of an anaemia with a low color index, a leucopenia, enlargement of the spleen, gastro-intestinal hemorrhages, and in its terminal stages cirrhosis of the liver and ascites together with the elimination of the other blood dyscrasias serve to establish the diagnosis.

Removal of the spleen is positively indicated in hemolytic jaundice, essential purpura hemorrhagica, splenic anaemia, rupture of the spleen, primary tuberculosis of the spleen, and in some of the splenomegalies due to chronic disease which have not proven amenable to medical measures.

It has a relative field of usefulness in some of the more pernicious blood dyscrasias such as early spleno-myelogenous leukemia especially if the spleen is the primary site of the trouble. W. J. Mayo in a recent article states that in going over the records for splenectomy done for pernicious anaemia he has found that those patients lived two and one-half times as long as those unoperated. However, in the pernicious anaemia it will ultimately rest with one's best judgment as to whether or not it is advisable to subject these patients to surgical measures.

Clinical experience teaches us that after removal of the spleen other organs of the reticulo-endothelial system take on a vicarious function and discharge it well. At present we have patients upon whom splenectomy was done fifteen years ago who are enjoying perfect health.

It is our opinion that with an earlier recognition of many of the primary anaemias and the full knowledge of the important role played by a hyperfunctioning spleen in the maintenance of a vicious circle that the removal of the spleen will be resorted to earlier and much more satisfactory results obtained.

In the type of cases reported herewith it is curative and is the only curative measure known today. The results in such cases are marvelous.

BIBLIOGRAPHY.

1. Chaney, Wm. C. A Clinical and Pathological Study of 69 Casec, Am. J. Med. Sc., June, 1923.

2. Mayo, Wm. J. The Mortality and Results of Splenectomy, Am. J. Med. Sc., March, 1926.

3. Mayo, Wm. J. Maladies in which Splenectomy May Be Indicated, Mayo Clinic, 1916.

4. N. E. Brill and N. Rosenthal. "The Curative Treatment by Splenectomy of Thrombocytopenic Purpura Hemorrhagica", Am. J. Med. Sc., October, 1923.

5. Kahn, M. H. The Diagnosis of Spleen Function, Am. J. Med. Sc., February, 1923.

6. Pacini, A. J. P. Splenectomy in Spleno-Megalies, Annals of Surgery, March, 1918.

7. Hitzrot, Jas. M. Surgical Treatment of Pernicious Anaemia, Annals Surg., January, 1922.

8. Balfour, D. C. Splenectomy for Repeated Gastro-intestinal Hemorrhage, Annals Surgery, January, 1918.

9. Balfour, D. C. Technique of Splenectomy, Mayo Clinic, 1916.

10. Pool, Eugene H., and R. G. Steldman. Surgery of the Spleen.

11. Griffin, H. Z. Splenectomy for Splenic Anaemia in Childhood and for the Splenic Anaemia of Infancy, Ann. Surg., December, 1915.

12. Hitzrot, J. M. Splenectomy in Hemorrhagic Purpura, Annals Surgery, August, 1923.

13. Hitzrot, J. M. The Effect of Splenectomy on the Normal Individual and in Certain Pathological Conditions, Annals Surgery, May, 1918.

14. Rodman, J. Stew., and Willard, D. P. Splenic Anaemia with Special Reference to Etiology and Surgical Treatment, Annals Surgery, November, 1913.

15. Herrick, T. C. Splenic Anaemia with Splenectomy, Annals Surgery, 1914.

16. Tice Practice of Medicine.

17. Oxford Medicine.

18. Osler, Wm. System Med., 1920.

DISCUSSION.

Dr. Carroll W. Allen (New Orleans): My personal experience in surgery of the spleen has been limited to a series of one case, and I therefore do not feel competent to discuss the subject. I have devoted all my time in medicine to developing along the line in which I had plenty of material with which to work, and I have had but one splenectomy in my experience of twenty-seven years. I did the Crile operation and the patient got well.

Dr. J. W. Barksdale (Jackson): Of the first two conditions the doctor mentions I have no knowledge whatever, but I want to congratulate him on his results. With reference to Banti's disease, it is my impression that we have here a primary condition of the spleen, and that unless operation is undertaken relatively early we cannot hope to arrest the sclerotic condition of the liver. The doctor mentions this case as having a known splenic anaemia for ten years, and that cirrhosis was present is undoubted because of the hemorrhage from the stomach and intestines. In cirrhosis of the liver it is not uncommon to get bleeding from the esophageal plexus. The question comes up whether, the cirrhosis having existed for ten years, the spleen might not have been secondarily involved. I believe in those cases more benefit is derived from the Talma-Morrison operation than from splenectomy. The Talma-Morrison operation, while unsatisfactory in some cases, in others yields good results. I would not as a rule advocate splenectomy where there is cirrhosis of ten years' standing, for whenever you get fibrosis you might as well say good-bye so far as effecting any radical change is

concerned, and in that case the Talma-Morrison operation does more good than a splenectomy.

The other two cases I would not have attempted to operate on. I am glad the doctor reported them. We all have had purpural bleeding to deal with to some extent, but I am totally unfamiliar with such cases as he has presented.

Dr. E. M. Holder (Memphis, Tennessee): The recent literature has been prolific in discussions of splenectomy in purpura hemorrhagica. We have had 1,000 cases in Memphis and the results have been very pleasing. Recently we have used calcium chloride in infections of the blood—5 cc. of a 10 percent solution given intravenously, one dose a day for three days. We had a case under observation, a patient who was jaundiced.

The first day the clotting time was eight minutes; the next day after giving him calcium chloride intravenously the laboratory reported that the clotting period was four and a half minutes. In giving calcium chloride one should be sure not to give more than 1 cc. per minute; take five minutes to give 5 cc. When calcium chloride gets out of the vein it produces a reaction, a necrosis that is distressing.

I think the operation of splenectomy for purpura is very pleasing. I would advocate it. His next case, hemolytic jaundice, required more temerity than the first, but the results justified his action—the patient got well. Three successful splenectomies are encouraging. The only thing I am afraid of is that he will do so many that nobody will have any spleen down in that section, and without a spleen a fellow really has no backbone—he is more of a jelly fish than anything else.

In his Banti's disease case I am not in position to say whether splenectomy or the Talma-Robinson operation would be the best—but the patient got well. The Talma-Morrison operation has never been very popular because seven times out of ten you get no result. True, it is comparatively free from risk, but most of the operations are not satisfactory. I think the doctor was surgically correct in taking out the spleen in at least two cases, and in the other one he got by—probably his surgical judgment being more worthy of praise than the operation.

Dr. Sam H. McLean (Jackson): I have done one Talma-Morrison operation for ascites resulting from cirrhosis of liver. The man is living and well and has never had a recurrence.

Dr. H. A. Gamble (closing): One case had severe diabetes mellitus for ten years, and one splenic anemia for two years. At the time of operation I was not positive whether I was dealing with splenic anemia or cirrhosis of the liver. There was cirrhosis of the liver present, but it did not account for the white blood cell count. Taking into consideration the size of the spleen, the adhesions, and the prompt recovery of the patient—the improvement in general health, in the blood picture, the gain in weight and strength and also the improvement of the diabetic condition, I believe the removal of the spleen was a decided factor in the recovery.

Dr. Holder spoke of people having no spleen. There are certain organs that take on a vicarious function when the spleen is removed so that the spleen is not absolutely necessary.

There are other conditions in which a splenectomy can be done—hemorrhagic jaundice, rupture of the spleen, early myelitic leukemia—in many of these it is often indicated. In a recent compilation Dr. W. J. Mayo has this to say in regard to pernicious anemia—that they have found on going over their cases that operated patients lived two and a half times as long as unoperated cases. I believe splenectomy has a very important field of usefulness in the treatment of this type of case, but it is much better to recognize splenic anemia cases early before cirrhosis of the liver appears. There is no blood picture that is absolutely indicative of splenic anemia. You have leucopenia, a low color index, enlargement of the spleen, gastrointestinal hemorrhages—these four are practically the only things distinctive of splenic anemia. The elimination of the other blood dyscrasias establishes the diagnosis.

NEW ORLEANS
Medical and Surgical Journal
Established 1844

Published by the Louisiana State Medical Society under the jurisdiction of the following named Journal Committee:

S. M. Blackshear, M. D., *Ex-Officio*
For three years, A. A. Herold, M. D., *Vice-Chairman;* Lucien Ledoux, M. D.
For two years, Oscar Dowling, M. D.; H. W. Kostmayer, M. D., *Secretary.*
For one year, H. B. Gessner, M. D., *Chairman.*

EDITORIAL STAFF

H. W. E. Walther, M. D.—*Editor*
H. Theodore Simon, M. D.—*Associate Editor*
J. S. Ullman, M. D.—*Associate Editor*
Paul T. Talbot, M. D.—*General Manager*

COLLABORATORS—COUNCILORS

For Louisiana	For Mississippi
H. E. Bernadas, M. D.	J. W. Lucas, M. D.
F. M. Johns, M. D.	D. W. Coker, M. D.
F. T. Gouaux, M. D.	M. W. Robertson, M. D.
S. C. Barrow, M. D.	T. W. Holmes, M. D.
F. C. Bennett, M. D.	D. W. Jones, M. D.
C. A. Weiss, M. D.	W. G. Gill, M. D.
V. A. Miller, M. D.	E. M. Gavin, M. D.
S. J. Couvillon, M. D.	W. H. Frizell, M. D.
	S. B. McIlwain, M. D.

SUBSCRIPTION TERMS: $3.00 per year in advance, postage paid, for the United States; $3.50 per year for all foreign countries belonging to the Postal Union.

News material for publication should be received not later than the twentieth of the month preceding publication. Orders for reprints must be sent in duplicate when returning galley proof.

THE JOURNAL *does not hold itself responsible for statements made by any contributor.*

Manuscripts should be addressed to the Editor, 1326 Whitney-Central Bldg., New Orleans, La.

ON TO ATLANTA.

The Southern Medical Association meets this year in Atlanta, November 15-18. The Fulton County Medical Society and the Georgia State Medical Association will serve as hosts and a big time—both scientifically as well as socially—is assured all those who are fortunate enough to attend. It is ten years since last the association met in Atlanta and many changes have come over this progressive city in the interval. The Henry Grady Hotel, in the heart of things, has been selected as headquarters.

The meeting opens Monday the 15th with clinics at the leading hospitals. The convention formally opens Monday night with an address of welcome and response, and the address of the president by Dr. C. C. Bass of New Orleans. There will be two general sessions on Tuesday the 16th, one in the forenoon and one in the afternoon, consisting of clinics and papers by distinguished visitors in medicine and surgery. In the mornings and afternoons of Wednesday and Thursday the various sections will hold their sessions. From present indications all of these sections are to present an array of most interesting and valuable contributions. Wednesday evening the oration in medicine and the oration in surgery will be given by two physicians of national reputation. Many alumni reunion suppers are also planned for this night and all Tulane men will have an opportunity to renew old acquaintances around the festive board. Make your plans now to be on hand for the big occasion.

The Woman's Auxiliary of the Fulton County medical society are arranging most enjoyable entertainment for the visiting ladies so you have no excuse for leaving the wife at home. For the members a golf tournament and a gun shoot tournament will appeal to many who love the out-of-doors. We wish to congratulate the local committee on their adding to the usual program—trap shooting being the innovation. Some time ago we commented upon the fact that there was far too much confinement at most medical meetings of this sort. It would be far better if the convention lasted throughout the entire week and devoted an entire half-day every day of the meeting to some sort of out-door recreation. This would prevent us from getting stale. And then, too, after we had returned to our homes and work we would feel more as if we had had a real vacation instead of just papers and tobacco smoke.

Not the least interesting feature of this meeting in so far as the readers of this Journal are concerned is the "President's Special" over the Louisville & Nashville railway which leaves New Orleans Sunday afternoon, November 14th, with President

and Mrs. C. C. Bass and the many physicians and their families who will want to travel with them. Our medical confreres from Texas and Mississippi as well as many from Louisiana should join the crowd from New Orleans on this occasion. We feel justly proud of our own Dr. C. C. Bass and we know from present indications that the "President's Special" will make a long, long trail. Maybe it will have to depart in two sections due to the many friends of Dr. Bass who wish to do him honor on the occasion.

Remember. Southern Medical Association. Atlanta. November 15-18. Bring the wife.

DR. FISHBEIN'S VISIT.

Your special attention is called to the approaching visit of Dr. Morris Fishbein, Editor of the Journal of the American Medical Association, to Louisiana in the second week of December.

Our President, Dr. Blackshear, and the Journal Committee through its Chairman, Dr. Gessner, have arranged for a series of addresses in Monroe, Shreveport, Alexandria, Lake Charles, Franklin, New Orleans, Covington and Baton Rouge. Part of these addresses will be devoted to interesting subjects as follows:

"The Work of the American Medical Association, "Medical Education of the Public," "Twenty-five Years of Medical Progress," "Business Ethics and Medical Ethics," "Medicine and the Press," "Fads and Quackery."

Some of the addresses will be before the medical fraternities, others before a joint meeting with the public. Most of the details for the above itinerary have been arranged. The profession of Louisiana should take advantage of this opportunity to show by their attendance and interest their appreciations of the efforts of our medical officers to have them properly informed on modern medical questions, which are of the utmost importance to them and to our relations to the public in general. This is a step for the edification of the doctors, and also of the public.

Let us accord to our distinguished visitor the support and co-operation he deserves by aiding in every manner possible to make the above meeting a success, to attend same and bring along all your friends.

MEDICAL INTELLIGENCE.

In a recent issue of *Time*, the weekly news magazine, we read the following:

"A year ago, in New Orleans, a paper began a column of medical information—how to diaper the baby, what to do before the doctor arrives, the difference between a boil and a carbuncle. The editor wished to be certain that such a column would really help in educating his public in health matters. He dispatched letters to all the medical men in his circulation territory, asking their advice. Not a reply reached him for several days. Then one, the first, came from Dr. Rudolph Matas, than whom there is no greater surgeon in all the South. He approved the newspaper's medical information. It helped pre-educate the physician's patients, and thereby made his work less difficult. The editor might print the letter. He did so, and at once hundreds of approving letters came from the lesser medicos of the neighborhood. Dr. Matas was big enough to break a professional convention."

"The teaching of health information to the public is a serious matter. *People want to know about diseases and how to cure them.* They are vitally interested, and, because they are interested, newspapers tend to print every scrap of medical information which they can secure."

"More and more doctors, of those who have pondered the question, of furnishing medical intelligence to the public, have decided that it is wise to do so. They hold themselves ready for interviews. When a newspaperman, frankly ignorant of medical minutiae, comes to such doctors for some sidelight on a current event, they patiently explain. To them the interview is not a

matter of getting their names into print, of overleaping a confrere's practice. Their sole aim is to make certain that the medical news which the public can digest is accurate."

"As a result of this eagerness of the public—and hence of newspapers—for medical 'news' the 'ethics' of the doctor who will not talk for publication are coming to be regarded in a different light, may, someday, be regarded as Pharisaical."

These five paragraphs from *Time* put the matter so tersely and express the Editor's convictions so clearly that he could not resist the temptation of reprinting them here. Only part of the article is given herewith. The writer mentioned, besides Dr. Matas, such men as Dr. G. A. Soper of the American Society for the Control of Cancer, Dr. R. T. Morris of the New York Postgraduate Medical School and Dr. C. H. Mayo of Rochester, Minn., as being among those ever ready to give the truth to the press when occasion demanded. And this is only as it should be.

At the last annual meeting of the House of Delegates of the Louisiana State Medical Society a resolution was adopted which was to provide for a Public Information Committee, the function of such a body to be that of furnishing to the Sunday papers throughout the State articles of an educational character acquainting the lay reader with the modern advance being made in medicine, with advice as regards cancer, tuberculosis, insanity, venereal diseases, and so forth.

Six months have elapsed since the resolution was adopted but so far as the *Journal* is aware nothing has been done. We doubt even if the Committee has been appointed. When will we awaken to our responsibility to the public? Has not the time arrived when we should cease bewailing the fact that State Medicine is making inroads in our practice and face the facts that we are doing precious little in the way of educating the public along lines of preventive as well as curative medicine. Let medical politics go by the boards. Make organized medicine subservient to the public's welfare. Only in this way can we bridge the gap that now exists between the doctor and the layman.

GAS CASUALTIES.

The Board of Medical Officers appointed by the Director of the U. S. Veterans' Bureau to study the residual effects of war gas expects to complete its studies of chlorine gassing by the first of the year.

The Board which held its first meeting March 9, 1926, is composed of Dr. Allen K. Krause, Member of the Group on Investigation and Research of the Medical Council of the U. S. Veterans' Bureau, and Associate Professor of Medicine at Johns Hopkins University; Lt. Col. Harry L. Gilchrist, M. C., U. S. A., Chief of Research Division, Chemical Warfare Service, U. S. A., and Dr. Philip B. Matz, Chief, Medical Research Sub-division, U. S. Veterans' Bureau.

Records show that approximately 70,000 men were gas casualties of varying degrees of severity during the war, 1843 of which were from chlorine gas. The War Department has made an investigation of the immediate effects of chlorine gassing in over 800 cases, and the present study by the Veterans' Bureau is expected to develop important information pertaining to the residual effects of this gas.

Upon completion of their investigation of chlorine gassing, the Board will commence a survey of the cases resulting from phosgene, mustard and other gases.

LOUISIANA STATE MEDICAL SOCIETY NEWS

H. Theodore Simon, M. D., Associate Editor.

All members of the Orleans Parish Medical Society are requested to notify the office of any change in address.

Our supply of the September, 1925, and April, 1926, issues of the Journal have been exhausted.

We would appreciate very much being advised by any physician who would desire supplying us with these back numbers.

ALUMNI NIGHT AT THE KANSAS CITY FALL CLINICS.

The Kansas City Annual Fall Clinical Conference will convene at the Hotel President, Kansas City, Mo., October 11, 12, 13, 14 and 15, 1926. Wednesday evening, October 13th, has been set aside as "alumni night" and the dinners of the various schools will be held at the Hotel President, 14th and Baltimore, at 7:00 p. m.

U. S. DEPARTMENT OF LABOR, CHILDREN'S BUREAU, WASHINGTON.

A national program for the prevention of maternal mortality and morbidity throughout the United States is outlined by the Children's Bureau of the U. S. Dept. of Labor in a report on maternal mortality made public. Some of the most salient features are as follows:

TREND OF MATERNAL MORTALITY SINCE 1900.

Figures showing the trend of maternal mortality over a 22-year period in the United States, if accepted at their face value, would show an increase in the maternal death rate from 13.3 per 100,000 population in 1900 to 16.9 in 1921, according to the report. However, analysis of various factors affecting these statistics, particularly the campaign for better certification of the causes of death during recent years, would indicate in reality a "very slightly downward trend" since 1900.

Comparison of the United States rates with those of other countries shows that the United States ranks among these having the highest rates, such as New Zealand and Chile. Among the countries having rates less than half that of the United States are Denmark, Finland, Italy, Japan, the Netherlands, Norway, Sweden, and Uruguay.

CAUSES OF MATERNAL MORTALITY.

Analysis of the causes of maternal deaths in this country shows that the most important single cause is puerperal septicemia, due to infection resulting from lack of surgical cleanliness and almost 100 per cent preventable through careful asepsis. Two-fifths of the maternal deaths in the death-registration area of 1921 were due to septicemia. Among other causes, puerperal albuminuria and convulsions was most important, contributing over one-fourth of the deaths. This cause is preventable through competent medical care during the prenatal and confinement period. Other causes of death included accidents of pregnancy, hemorrhage, accidents of labor.

MATERNAL MORTALITY LARGELY PREVENTABLE.

The preventability of maternal mortality is considered in the light of the analysis of causes and causal factors, by the Children's Bureau report.

"Almost all the mortality from puerperal septicemia is preventable," the report states. "Puerperal septicemia is infectious in origin, and its prevention depends upon the rigorous observance of asepsis. The Australian committee appointed to study the causes of death and invalidity in the Commonwealth states: 'Puerperal septicemia is probably the greatest reproach which any civilized nation can by its own negligence offer to itself. It can be prevented by a degree of care which is not excessive or meticulous, requiring only ordinary intelligence and some careful training.'"

A PREVENTIVE PROGRAM.

The preventive program suggested by the report, in its main outline, follows:

(1) Regulation of the practice of obstetrics, by requiring a license to practice from both physicians and midwives, by establishing minimum requirements for obtaining such a license, and by defining and prescribing penalties for malpractice.

(2) Regulation of public and private hospitals and maternity homes through legal provisions governing the establishment of such institutions and requiring that they be licensed and subject to inspection.

(3) Legislation for the control of venereal diseases including the making of these diseases reportable.

(4) Requiring that puerperal septicemia be made reportable, as is now the case in a number of States.

(5) Provision through Governmental or public sources of better facilities for training medical and nursing personnel and more adequate clinics, hospitals, and maternity homes.

(6) Subsidies in aid of State or local activities by Federal or State governments, as in the United States during the past four years through the Maternity and Infancy Act.

(7) Educational work directed toward informing mothers of the need of adequate maternity care.

IS INTELLIGENCE INHERITED?

The "Old conclusion that the highest intelligence comes out of stock that is highly developed on both sides" is reached by Grace Allen in a recent study, made for the Eugenics Record Office of the Carnegie Institution, of the families of a group of 49 children showing a high intelligence quotient. The study was undertaken to aid in discovering how far superior intelligence is a family characteristic, and covered race and nationality, age, occupation and eduction of the parents, rating of the homes, neighborhood conditions, mental status in the families, and fecundity and sex rates.

CORRESPONDENCE COURSE IN MOTHERHOOD.

Prospective mothers may enroll for a course of 15 lessons offered by the Massachusetts State departments of health and education through the State division of university extension, 217 State House, Boston, for a fee of $4. The topics treated include prenatal care, practical preparations for confinement, care of the baby and of the nursing mother, the sick baby, and weaning. Papers written by the students will be corrected with necessary comments and suggestions by an experienced physicians of the State public health service.

TRAVEL STUDY CLUB OF AMERICAN PHYSICIANS.

At the completion of its recent European Study Tour, the Travel Study Club of American Physicians elected Dr. Fred H. Albee of New York as President, Drs. Edward B. Heckel of Pittsburgh and John P. Lord of Omaha as Vice-Presidents, and Dr. Richard Kovacs of New York as Secretary.

Plans are being prepared for the next study trip, including the Central European countries: Germany, Austria, Czechoslovakia, Hungary and Italy.

BRAZIL'S JAPANESE PROBLEM.

Dr. O. da Fonseca, of the Oswaldo Cruz Institute, at Rio de Janiero, was a recent visitor to New Orleans. He visited the hospitals and clinics while here and gave all of the institutions high praise for the excellent work he saw going on. Dr. da Fonseca is on his way to Japan to study the various parasitic disease of that country in order to better protect the people of Brazil. The Japanese immigration problem in Brazil is of preventive medicine. Already there are over 40,000 Japanese immigrants in Brazil and many of these bring with them diseases peculiar to their homeland. It is these diseases that Dr. da Fonseca proposes to study so as to better safeguard the native population of Brazil. He, along with three other European pathologists have been assigned, by the League of Nations, to make this study.

NEW SUPERVISOR FOR PRESBYTERIAN HOSPITAL.

Mr. Joseph Oplatek has been appointed supervisor of properties and equipment of the Presbyterian Hospital of New Orleans. Mr. Oplatek was formerly connected with the Touro Infirmary.

NEWS NOTES.

The Fourth District Medical Society will meet at Shreveport on the afternoon and evening of Tuesday, October 5th, the evening session being held jointly with the Shreveport Medical Society. A good meeting and large attendance is anticipated, among those expected being Dr. S. M. Blackshear, of New Orleans, President of the L. S. M. S. Dr. Walter B. Hunter of Coushatta is president and Dr. C. E. Hamner of Shreveport is the secretary.

Minden, Webster Parish, reports good progress on the hospital being erected there.

The North Louisiana Sanitarium, Shreveport, will soon begin the erection of an addition of approximately twenty-five rooms, to relieve the crowded condition of the present building, which was completed only about two years ago.

Dr. Ernst A. Schmidt, a graduate of the University of Heidleberg, but lately of Denver, Colorado, has recently arrived, to take charge of the X-ray and radium departments of the North Louisiana Sanitarium.

The Shreveport Charity Hospital now has, in the course of erection, two fireproof wards, to replace the wards which were destroyed by fire about four months ago.

Herman Goodman, M. D., of New York City, had the unique distinction of speaking before two entirely different organizations on a subject allied to both within one week. On September 8th, the doctor spoke before the 20th annual convention of the Illuminating Engineering Society on Light in Medicine and Surgery; and Friday of the same week before the convention of the American Electrotherapeutic Association on the Physics and Biology of Light in Dermatology. The proposal was made for co-operation between the two organizations.

MISSISSIPPI STATE MEDICAL ASSOCIATION NEWS

J. S. Ullman, M. D., Associate Editor.

MISSISSIPPI.

The regular meeting of the Tate County Medical Society was held August 10 at Tyro, Mississippi, with President H. L. Murphey, of Arkabutlar, in the chair. Papers were read by Drs. E. L. Collins, J. C. Culley, B. S. Guyton, E. S. Bramlett, and Wm. R. Gilbert. The latter presented a very interesting case of microtia in a baby a few months of age.

The program announced for the meeting on September 14, held in Senatobia, was as follows:

"Eclampsia," by Dr. H. L. Murphey.

"Summer Diarrhea of Children," by Dr. W. D. Smith.

"Acute Nephritis," by Dr. H. F. Byers.

"Symptoms of Nephritis," by Dr. J. W. Thompson.

"Treatment of Nephritis," by Dr. Wm. R. Gilbert.

"Symptoms and Diagnosis of Chronic Pyelitis," by Dr. M. M. Powell.

"Treatment of Pyelitis," by Dr. G. H. McCain.

Discussions to be opened by Dr. W. D. Smith.

Dr. J. Sidney Eason, health officer of Tate county, reports vaccination against typhoid is being carried out throughout the county. He is also renewing his efforts to better sanitary conditions and states than when he gave up the office four years ago there was eighty per cent of sanitary toilets throughout the county, but upon resuming the office he finds now less than two per cent. He is, therefore, carrying on an intensive campaign to get this condition improved.

Dr. J. D. Donald, of Hattiesburg, died August 26 after having been in poor health for two years. Dr. Donald was one of the prominent physicians of Mississippi and in addition to having been a popular and successful practitioner he showed his good citizenship by having served in the State Legislature for several years. During the time of his office as legislator, he gave considerable aid to the campaign then under way to aid the State Board of Health in its work for better sanitation throughout the State.

The regular meeting of the South Mississippi Medical Society was held September 9 at the South Mississippi Charity Hospital, Laurel, Mississippi, with the following program:

"Infant Feeding," Dr. G. F. Riley, Meridian. Discussion by Dr. T. T. Batson, Hattiesburg, and Dr. J. S. Gatlin, Laurel.

"Diagnosis and Treatment of Acidosis," Dr. J. C. Butler, Laurel. Discussion by Dr. M. L. McKinnon, Laurel, and Dr. G. D. Mason, Lumberton.

"Diabetes Mellitus," Dr. G. W. F. Rembert, Jackson. Discussion by Dr. J. B. Jarvis, Laurel, and Dr. C. R. Garraway, Laurel.

"Diagnosis and Treatment of Typhiod Fever," Dr. S. E. Bethea, Hattiesburg. Discussion by Dr. H. C. McLeod, Hattiesburg, and Dr. T. E. Ross, Sr. Hattiesburg.

"Entamebiasis," Dr. S. H. Mixon, Laurel. Discussion by Dr. C. C. Hightower, Hattiesburg, and Dr. T. E. Ross, Jr., Hattiesburg.

"Diagnosis and Treatment of Lobar Pneumonia," Dr. E. N. Blount, Bassfield. Discussion by Dr. J. R. Kittrell, Laurel, and Dr. N. B. Smith, Ellisville.

"Eclampsia," Dr. L. L. Polk, Purvis. Discussion by Dr. C. M. Davis, Laurel, and Dr. R. H. Foster, Laurel.

"Technic of Gall Bladder Pictures," Dr. H. G. McCormick, Laurel. Discussion by Dr. W. W. Crawford, Hattiesburg, and Dr. W. N. Blount, Laurel.

At the conclusion of the scientific program a banquet was served at the Laurel Y. W. C. A.

Forrest County Health Department, with the city and civic organizations co-operating, have declared war on mosquitoes. They are not satisfied to control malaria only, but are determined to abate the nuisance.

The doctors are co-operating by filing reports showing infective areas. They are checking their clinical diagnosis with laboratory examinations.

Mr. George Parker, director of malarial control, and the Gorgas Memorial Institute are rendering valuable assistance by furnishing literature for publication.

Dr. R. C. Molloy, of Birmingham, has been spending a few weeks at the Mississippi State Sanitorium taking special work on disease of the chest.

Dr. May F. Jones of the Sanitorium Staff recently returned from the Trudeau School of Tuberculosis at Saranac Lake, New York.

Dr. Henry Boswell will attend the Tuberculosis Conference in Washington this fall, representing the Sanatorium.

The Mississippi District Nurses Association No. 1 met at the Sanatorium on September 8. There was a good number of nurses present.

SOUTHERN CONFERENCE ON TUBERCULOSIS.

The above conference will be held in Washington, D. C., Hotel Mayflower, October 2, 1926, with meetings at 10:00 a. m. and 3:00 p. m. Those interested therein should get in communication with Dr. L. B. McBrayer, President, Southern Pines, N. C., or Miss Bertha Clement, Secretary, 2019 Avenue F, Birmingham, Ala. The annual membership fee is one dollar.

The International Conference on Tuberculosis convenes immediately preceding the Southern Tuberculosis Conference, and the National Tuberculosis Association convenes on the following Monday.

The program is built around the child. Dr. Joseph Murphy, chief medical inspector of public schools, Washington, D. C., will demonstrate the proper examination of a child and describe a child clinic. One other physician will talk on the diagnosis of tuberculosis in the child, and probably interpret some X-ray plates of the chest of children. Two or three others will develop sociologic phases of child health.

Dr. S. B. Boykin, the new superintendent of the State Charity Hospital, Jackson, Mississippi, who succeeded Dr. David Walley, announces his complete staff as follows:

Dr. Julius Crisler, president of the staff.

Surgical staff: Drs. J. P. Wall, chief; J. W. Barksdale, A. E. Gordon, John McClain, and Joe Armstrong.

Medical staff: Drs. G. W. F. Rembert, chief; John McIntosh, J. W. Ware.

Pediatrics: Dr. N. C. Wormack.

Ear, Eye, Nose, Throat: Drs. E. L. Posey and George Atkins.

Geneto-Urinary: Drs. Wallace Britt and Frank Alstyne.

Eye service: Dr. W. S. Simms.

Dr. G. S. Ramsey is assistant superintendent and Miss Evalyne Weserhoff superintendent of nurses.

During the first week of September Dr. Boykin entertained his staff and members of the Board of Trustees of the State Charity Hospital at a dinner at the Edwards Hotel.

At the staff meeting of Vicksburg Sanitarium, September 10, the following cases were discussed:

1. Early Lymphatic Leukemia, Dr. A. Street.
2. Typhoid Fever, Dr. G. M. Street.
3. Occlusion of Ureters by Uterine Fibroid—Hydronephrosis, Dr. J. A. K. Birchett, Jr.
4. Occlusion of Ureters by Uterine Fibroid—Pyelonephrosis—Diabetes Mellitus, Dr. L. J. Clark.
5. Impression of the St. Louis Hospitals, Dr. E. H. Jones.

Dr. H. R. Shands resumed work in his office early in September after a month's visit to clinics in New York.

Dr. E. L. Posey spent the month of August in the north and northwest.

Dr. G. W. F. Rembert spent a month at Eastern clinics during August.

Dr. N. C. Womack spent a week's vacation on the Gulf coast.

Dr. J. S. Ullman, Natchez, is visiting clinics in Boston and New York. He expects to be absent from his office during the month of October.

PERIODIC HEALTH EXAMINATION.

The State Board of Health has recently published a form for periodic health examination which it is distributing, free of charge, to the physicians of the State. This form, though somewhat simplified, is arranged along the lines of that published by the American Medical Association. The doctors of Mississippi need not be told of the advantages or of the necessity of making periodic health examinations.

The laity, generally, is cognizant of the necessity of having their teeth examined once or twice a year, but few, if any, ever seem to think that there may be other organs in their body that need examination at regular intervals.

Many doctors are in the habit, when they make a periodic health examination, of arranging with the patient to remind them again in the course of six months or a year that they are due for another examination. This system makes a very favorable impression on the patient and, of course, is likely to be a means of retaining the friendship and patronage of a patient.

These examinations are a benefit to the physician, particularly where the blank is filled out in a painstaking manner. It gets the physician into the habit of making a regular and systematic examination. The records of examinations naturally cause a physician to be more thorough in his work and to remember more readily what his examination has disclosed. Of course, records are not of much value to a physician unless they are properly filed and are readily accessible to him.

BOOK REVIEWS

Pediatrics: By various authors. Ed. by Isaac A. Abt, M. D. V. 8 and Index. Philadelphia. W. B. Saunders Co. 1926.

Volume eight completes the set of this work on pediatrics compiled by Dr. Abt. It takes up the diseases of the skin, diseases of the ear, of the eye, tumors of infants and children, the parasitic diseases and contains a monographic treatise on the planning, scope and construction of hospitals for infants and children. Plans for such hospitals are given in detail, taken from some of our larger children's hospitals in this country as well as abroad. The functions of such hospitals are discussed, together with the duties of governing boards, institutional management, in short, every phase of hospital construction, equipment and management is dealt with in detail.

The chapter on medico-legal questions forms an important part of this volume and is written by an authority on the subject.

A general desk index of the entire work accompanies this last volume.

In this work Dr. Abt has given to the pediatric world an enduring reference library with a bibliography complete on every subject that confronts the pediatrist.

L. VON MEYSENBUG, M. D.

Hydrogen Ion Concentration of the Blood in Health and Disease: By J. Harold Austin. Baltimore. Williams and Wilkins. 1926.

This monograph, which constitutes volume viii of the series of "Medicine Monographs," published by Williams and Wilkins, is a reprint of a review of this subject which appeared in the review Journal "Medicine" for August, 1925.

The book is divided into four chapters of which the first treats of the general physical chemical principles which are fundamental to an understanding of the subject of hydrogen ion concentration.

Chapter II deals with normal pH values, chapter III with the pH of plasma in disease, while chapter IV contains a critical discussion of the principles involved in the methods used for the determination of pH of blood and other body fluids; no directions for laboratory work are included and for information on this topic the reader is referred to Clark's well known monograph.

At a time when new facts regarding the importance of the acid base equilibrium of the body are being revealed by workers in almost every branch of the medical sciences, this volume, written by two of the most active investigators in this field, should prove very useful to anyone who may desire to obtain authoritative information on the subject.

Chapter III, entitled "pH of Plasma in Disease," will be found particularly valuable by the clinical worker who may be interested in this line, as it contains a critical review of all recent work of the subject. An excellent bibliography is included at the end of the text.

W. DENIS, M. D.

Treatment of Common Disorders of Digestion: By John L. Cantor, M. D. St. Louis. C. V. Mosby Co. 1924.

The concise volume covers the medical treatment of the more prominent functional and diseased conditions of the digestive tract. The book, in this way, represents a very excellent ready reference for the practitioner. The simpler and better methods of treatment now being applied to certain physical and nervous states of the gastro-intestinal tract are given a prominent consideration. The management of asthenia and ptosis, symptoms attributed to neurasthenia, constipation and other dysfunctions is correctly emphasized and very clearly outlined. The chapters on the diagnosis of the spastic colon and the proper dietary treatment of this frequently overlooked cause of constipation, so muchly abused with cathartics, deserves favorable comment and recommendations. Kantor's researches on the mobile cecum and redundant colon so beautifully illustrated in the text, have unraveled some of the more remote causes of vomiting and other reflex gastric and intestinal symptoms. The chapters on gastric and duodenal ulcer and the chapter on gallbladder disease, while fully covering these subjects, do not compare in interest with the newer material presented in the other parts of the volume.

The book is purposely limited in its scope, not treating at all of many intrinsic disturbances seen in the every-day practice on the digestive canal.

DANIEL N. SILVERMAN, M. D.

Surgery of the Spleen: By Eugene H. Pool, M. D., and Ralph J. Stillman, M. D. New York, D. Appleton & Co. 1923.

This volume covers, in its entirety, the surgery of the spleen. It begins with an introduction—giving the historical data—and then takes up successively in each chapter the anatomy (em-

bryology, anomalies and histology); the physiology and pathology; the examination (physical and clinical); the classification of splenomegaly; splenomegaly associated with diseases of the blood; splenomegaly and diseases of the blood; cysts, neoplasms and traumatic lesions and, finally, operative procedures. A complete bibliography is appended to each chapter.

The classification of splenomegaly is lengthy, has no uniform basis and is of little use. Only a brief discussion of essential thrombocytopenia is entered into. This is unfortunate, as it is in this particular field that splenic surgery has achieved its most brilliant results.

The monographic form for surgical contribution should be more generally adopted as in this way the subject can be more exhaustively treated. This volume is the beginning of such an attempt and even though the authors acknowledge the limitations and deficiencies of their subject, the reader is totally unaware of it, so thoroughly has this subject been presented.

This monograph though not of value to the student, well merits a place in the library of the internist and surgeon.

PAUL G. LACROIX.

A Text-Book of Psychology for Nurses: By Maude B. Muse. Illustrated. Philadelphia and London, W. B. Saunders Company. 1925.

In preparing this valuable text-book Miss Muse has had in mind the fact that nurses need a knowledge of psychology just as much as do teachers and social workers; in fact their need is probably greater than the members of most other professions. She has presented in a simple way such phases of modern reaction psychology as should prove useful to the nurse, and has shown how the laws and principles of psychology may be applied to nursing problems. The work will serve a useful purpose as a text-book in schools of nursing and as a reference book for courses in nursing education in the universities as well as a book for home study and personal reading for graduate nurses.

FRANCIS M. MUNSON, M. D.

The Transplantation of Tissues: By Harold Neuhof, M. D. New York, D. Appleton & Co. 1923.

This reviewer must confess to a distinct preference for the monograph as a means of conveying scientific knowledge. Many reasons might be given but two will suffice. First, a monograph may be so limited in its scope that it falls entirely within the limits of the interests and knowledge of the author. Second, to quote one of our late fellows, the small volumes rest much comfortably on the reader's belly.

The transplantation of tissues is one of the most fascinating and least understood subjects related to surgery. Dr. Neuhof has undertaken a discussion of both the purely scientific and the clinical aspects of the problem. A complete and detailed consideration of all the research reported would be, of course, too bulky and confusing for most readers. However, all the more notable contributions are analyzed and the more important theories discussed. Known facts are carefully separated from unproven speculations. Fundamental principles indications for transplantation of tissues, and prognosis are admirably and conservatively stated. All other considerations are properly made subsidiary to the prime object of all surgery, to improve the condition of the patient. It is interesting to know that probably all free grafts are replaced eventually by the lost tissue, but the important thing is to know that in spite of this, deformities may be permanently corrected.

Technique is discussed briefly and many valuable suggestions will be found. The material is conveniently grouped and indexed. After an admirable discussion of general principles, the various tissue groups are considered separately. For those who desire to go more deeply into the subject, an extensive bibliography is appended to each chapter.

The author's style is quite readable, and his language notably precise. He maintains the detached and skeptical attitude of the true scientist, but manages to combine with it, the pragmatic philosophy of the practical surgeon. The essential point is, Will it work? He expresses his own opinions freely, but with restraint. Sensation mongers will find no comfort in the final chapter, The Transplantations of Organs.

This is an authoritative treatise, a notable contribution to surgical literature.

J. D. RIVES, M. D.

Diseases of the Skin: By Richard L. Sutton, M. D., LL.D., F. R. S. (Edin.). St. Louis, C. V. Mosby Company. 1926.

The sixth edition of Diseases of the Skin, by Dr. Sutton, embodies the best of his former editions with a marked increase in illustrations, a collection of pathological pictures chosen from the best this branch of medicine affords, a more extensive treatise of the parasetic infections and allergies, a very modern, conservative system of therapy.

Each disease has a very complete but concise presentation with extensive bibliographies; giving one the meat of the nut, well illustrated, and yet so briefly that the reader does not tire.

The student, practitioner, and specialist alike will find this book a ready, up-to-date, reference in the subject.

M. T. VAN STUDDIFORD, M. D.

Clinical Pediatrics: By John Lovett Morse, A. M., M. D. Phil. and Lon., W. B. Saunders Co. 1926.

Dr. Morse in his preface says that the book was written primarily for his own amusement, and if this be so, further evidence of his keen sense of humor is furnished those of us who have known and studied under him. Elsewhere in the text the author admits to a certain degree of old fashionedness; we feel, however, that he does himself an injustice in choosing an unfortunate, if modest, word, and our interpretation is that he displays in his writing the same good, hard common sense that he does in his practice and his lectures.

He admits further, that he has written only about those disease with which he has had personal experience. The fact that the book comprises a volume of over 800 pages and deals with every condition that the pediatrist is apt to meet with, testifies to his far-reaching knowledge and experience. That the book is readable is evidenced by such statements as: "If people would behave themselves they would not have syphilis."

Throughout the work there is an undercurrent of thought directed toward the practical, towards methods and procedures which can be carried out in the home without elaborate apparatus and there is mute evidence of contempt for superscientific laboratory tests and therapeutic ballyhoo.

In the chapter on the prescribing of modified milk, Dr. Morse adheres to Rotch's percentage method of calculation of formulae. For the practitioner this method is somewhat complicated and is falling more and more into disuse.

There are many illustrations throughout the book, but there is no bibliography and very few references. The work could not be used as a teaching text, but for the doctor who wants to know how to treat his pediatric cases, there is a fund of valuable information gathered together in this one volume which, for clinical use, is without a rival.

L. VON MEYSENBUG, M. D.

PUBLICATIONS RECEIVED.

D. Appleton & Company, New York and London: "Gastro-Enteroptosis," by Coffey. "Diseases of the Nose and Throat," by Thomson. "Surgery of the Spleen," by Pool and Stillman. "Transplantation of Tissue," by Neuhof.

W. B. Saunders Company, Philadelphia and London: "The Treatment of Fractures," by Charles Locke Scudder, M. D.

Paul B. Hoeber, New York: "The Human Cerebrospinal Fluid." "Surgery of Neoplastic Diseases by Electro-Thermic Methods," by Wyeth.

J. B. Lippincott Company, Philadelphia and London: "The Modern Treatment of Hemorrhoids," by Joseph Franklin Montague, M. D., F. A. C. S.

Lea & Febiger, Philadelphia and New York: "A Manual of Proctology," by T. Chittenden Hill, Ph. B., M. D., F. A. C. S.

The C. V. Mosby Company, St. Louis: "A Practice of Pysiotherapy," by C. M. Sampson, M. D. "The Surgical Treatment of Goiter," by Willard Bartlett, A. B., A. M., M. D., D. Sc., F. A. C. S.

F. A. Davis Company, Philadelphia: "Defective Memory, Absentmindedness and Their Treatment," by Arnold Lorand, M. D. "Electro-Therapeutic Methods in the Treatment of Neoplastic Diseases," by Morgan. "Practical Materia Medica and Prescription Writing," by Oscar W. Bethea, M. D., Ph. G. F. C. S. "The Duodenal Tube and Its Possibilities," by Max Einhorn, M. D. "Practical Dietetics in Health and Disease," by Sanford Blum, A. B., M. S., M. D.

P. Blakiston's Sons & Company, Philadelphia: "Gould's Medical Dictionary," by George M. Gould, A. M., M. D., edited by R. J. E. Scott, M. A., B. C. L., M. D.

Medical Life Press, New York: "Essays in the History of Medicine," by Karl Sudhoff, M. D., edited by Fielding H. Garrison, M. D.

The Oak Press, Chicago: "Cannula Implants and Review of Implantation Technics in Esthetic Surgery," by Charles Conrad Miller, M. D.

Harvard University Press, Chambridge: "Delusion and Belief," by Charles Macfie Campbell.